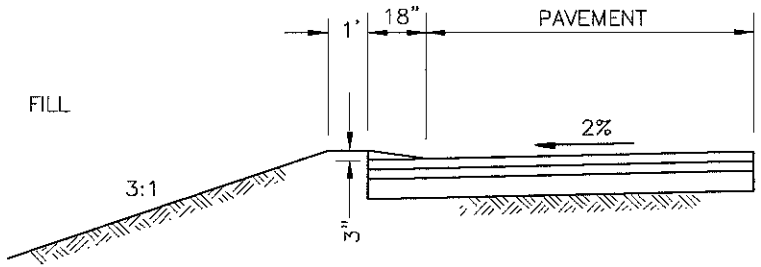


ASPHALT THICKENED EDGE
IN FILL SECTION

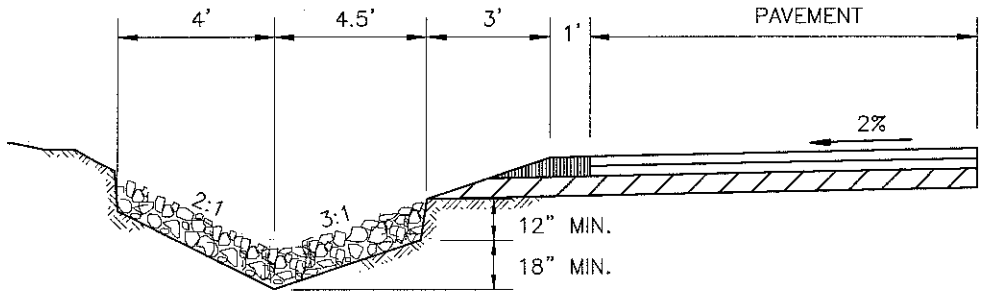
NOTES:

1. ASPHALT THICKENED EDGE MAY BE USED WHERE NO DITCH EXISTS OR A CLOSED DRAINAGE SYSTEM IS LOCATED BENEATH A PAVED SHOULDER.

2. A ROCK-LINED DITCH SHALL BE USED FOR OPEN CHANNEL SYSTEMS WITH GRADIENTS BETWEEN 8% AND 15% INCLUSIVE.

3. STANDARD RECTANGULAR FRAMES AND VANED GRATES SHALL BE USED FOR INLETS AND CATCHBASINS.

SEE TEXT SECTION 5-04



ROCK-LINED SHOULDER DITCH
IN CUT SECTION

CRUSHED SURFACING TOP COURSE

SNOHOMISH COUNTY PUBLIC WORKS		APPROVED BY:
5-010	SHOULDER DITCHES	COUNTY ROAD ENGINEER — DATE 9/23/10

NOTES:

1. YARD DRAINS TO BE CONSTRUCTED FROM HIGH DENSITY POLYETHYLENE (HDPE) N-12 PIPE IN ACCORDANCE WITH ASTM C 14.

2. CUTOUT HOLE SIZE IS EQUAL TO OUTLET PIPE OUTSIDE DIAMETER PLUS YARD DRAIN WALL THICKNESS.

3. CONNECTION TO OUTLET PIPE TO BE MORTARED AND MADE FLUSH WITH INSIDE OF THE YARD DRAIN WALL.

4. CAST IRON BELL GRATE. FITS INTO BELL RECESS AND EXTENDS FLUSH WITH FACE OF BELL. THE GRATE SHALL HAVE SLOTS (HOLES) THAT CONSTITUTE 50 PERCENT OPEN AREA FOR DRAINAGE. INLET BELL SURFACE SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.

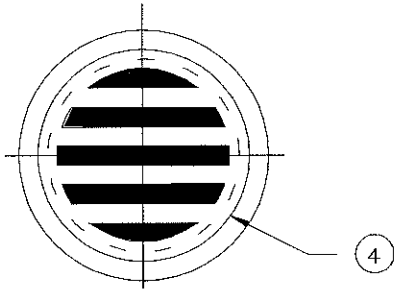
5. WASHED DRAIN ROCK. 6 INCHES MINIMUM DEPTH.

6. VARIES 12 INCHES OR 18 INCHES.

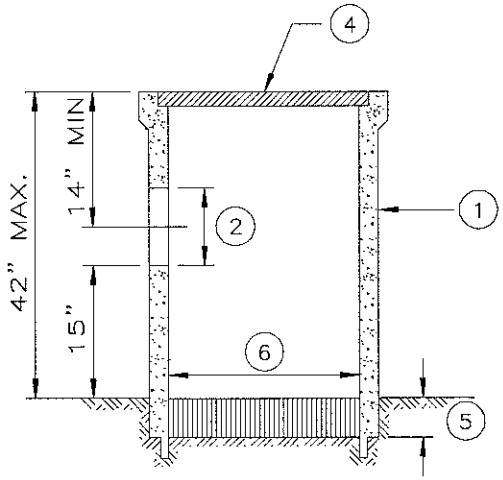
7. SPECIAL CAST YARD DRAIN MAY BE REQUIRED FOR MULTIPLE PIPE CONNECTIONS.

8. CLEAN OUTS ARE REQUIRED FOR DEPTHS OVER 42 INCHES.

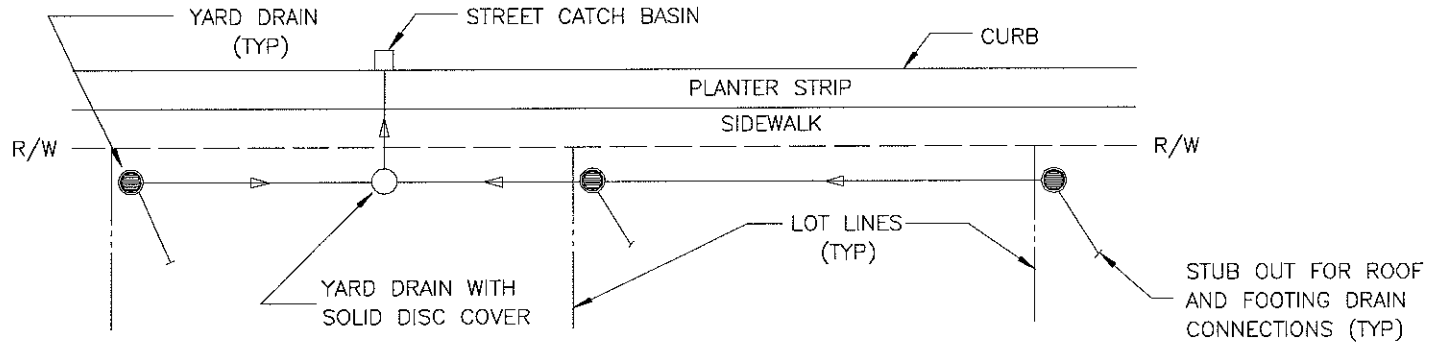
SEE TEXT SECTION 5-05.



PLAN VIEW

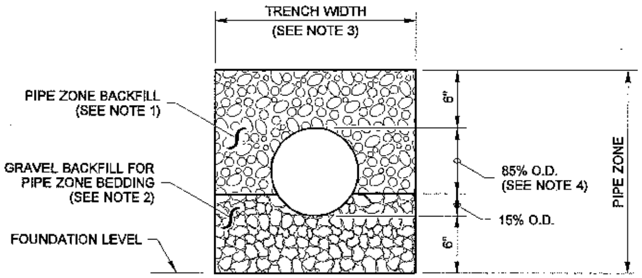


ELEVATION VIEW

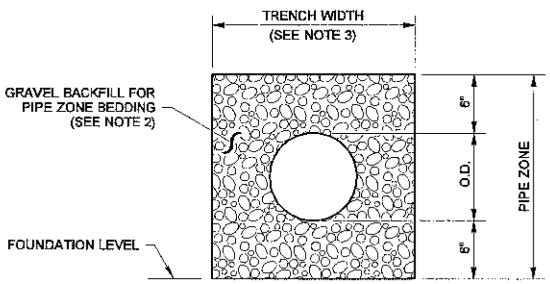


TYPICAL LOT PLACEMENT

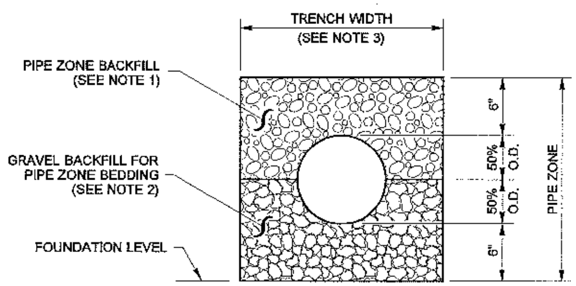
	SNOHOMISH COUNTY PUBLIC WORKS	APPROVED BY: 9/23/10
	5-030 YARD DRAIN CONNECTIONS	COUNTY ROAD ENGINEER DATE



CONCRETE AND DUCTILE IRON PIPE



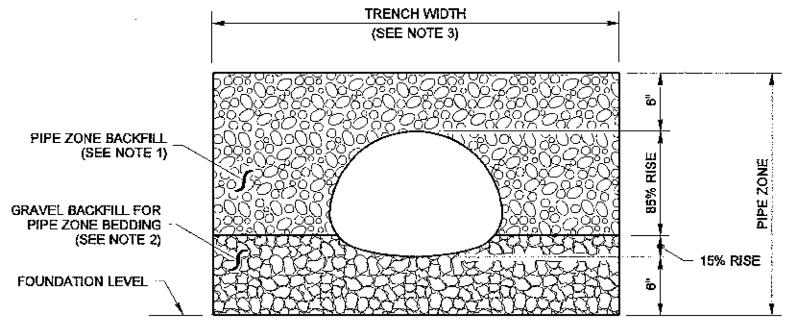
THERMOPLASTIC PIPE



METAL PIPE

NOTES

1. See Standard Specifications Section 7-08.3(3) for Pipe Zone Backfill.
2. See Standard Specifications Section 9-03.12(3) for Gravel Backfill for Pipe Zone Bedding.
3. See Standard Specifications Section 2-09.4 for Measurement of Trench Width.
4. For sanitary sewer installation, concrete pipe shall be bedded to spring line.



PIPE ARCHES

CLEARANCE BETWEEN PIPES FOR MULTIPLE INSTALLATIONS		
PIPE	**SIZE**	**MINIMUM DISTANCE BETWEEN BARRELS**
CIRCULAR PIPE (DIAMETER)	12" to 24"	12"
	30" to 96"	DIAM. /2
	102" to 180"	48"
PIPE ARCH (SPAN) METAL ONLY	18" to 36"	12"
	43" to 142"	SPAN /3
	148" to 200"	48"

EXPIRES JULY 1, 2007

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PIPE ZONE BEDDING AND BACKFILL

STANDARD PLAN B-55.20-00

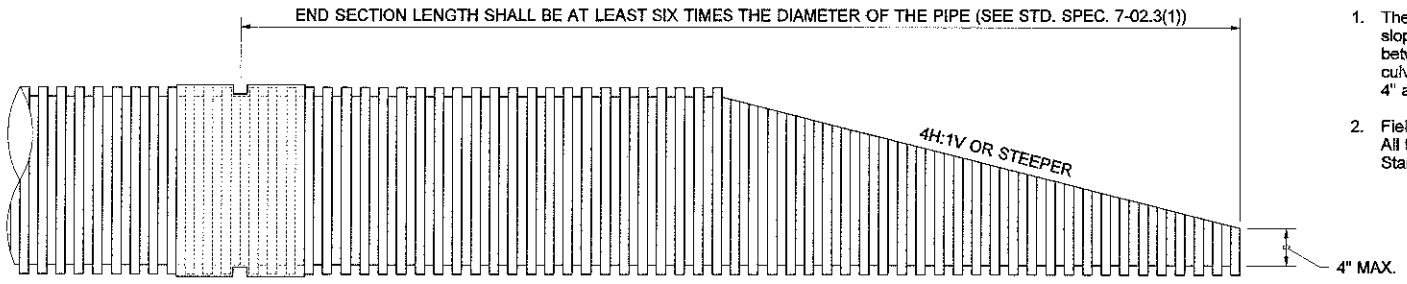
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

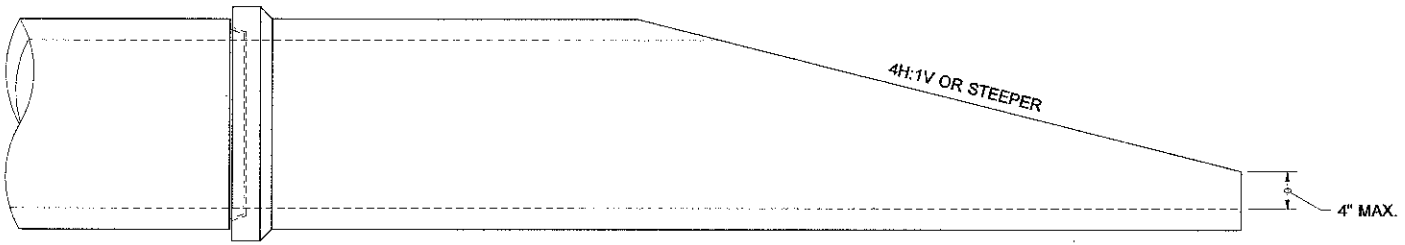
Harold J. Peterfeso — *06-01-06*

STATE DESIGN ENGINEER — DATE

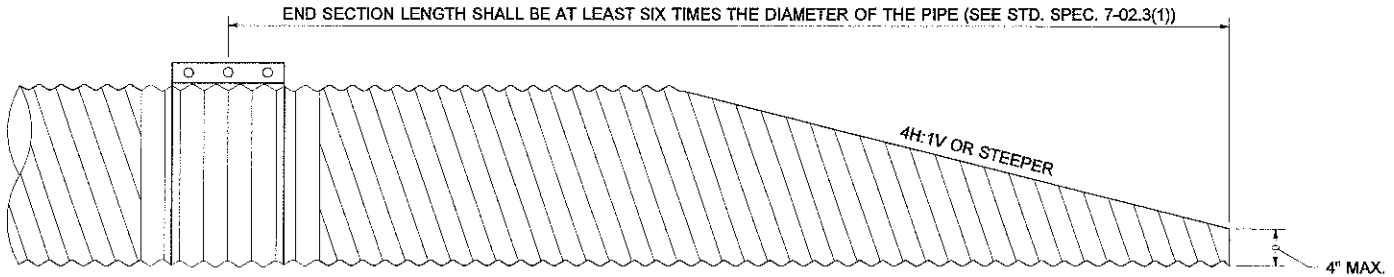
Washington State Department of Transportation



THERMOPLASTIC PIPE



CONCRETE PIPE

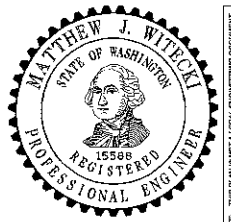


METAL PIPE

NOTES

1. The culvert ends shall be beveled to match the embankment or ditch slope and shall not be beveled flatter than 4H:1V. When slopes are between 4H:1V and 6H:1V, shape the slope in the vicintiy of the culvert end to ensure that no part of the culvert protrudes more than 4" above the ground line.
2. Field cutting of culvert ends is permitted when approved by the Engineer. All field-cut culvert pipe shall be treated with treatment as shown in the Standard Specifications or General Special Provisions.

FOR CULVERTS 30" DIAMETER OR LESS



BEVELED END SECTIONS

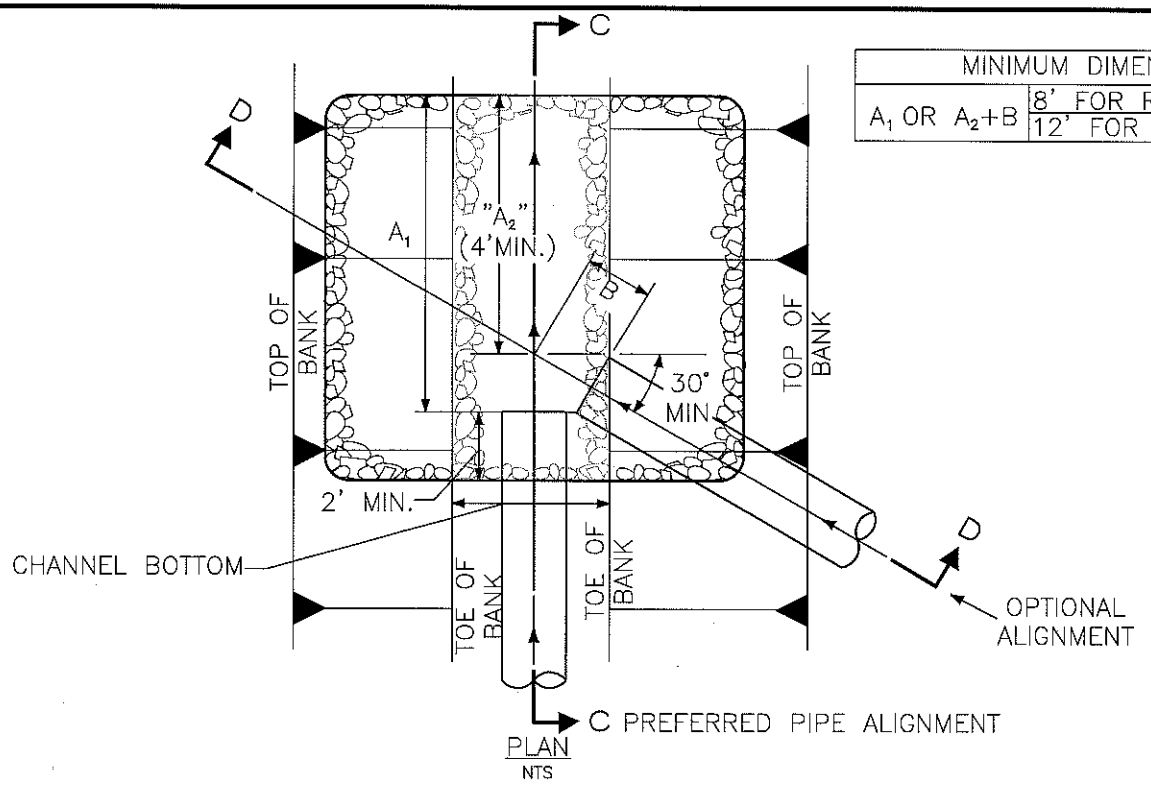
STANDARD PLAN B-70.20-00

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

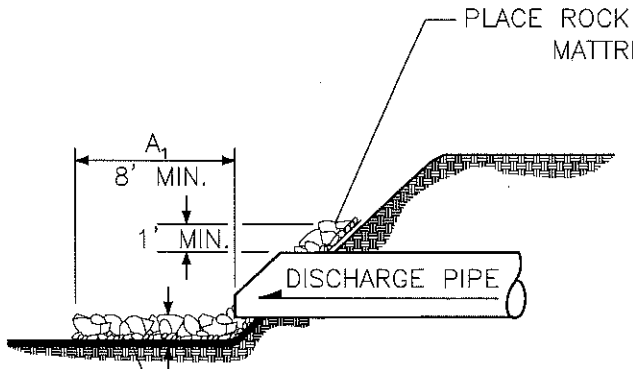
Harold J. Peterfeso — STATE DESIGN ENGINEER — *06-01-06* — DATE

Washington State Department of Transportation

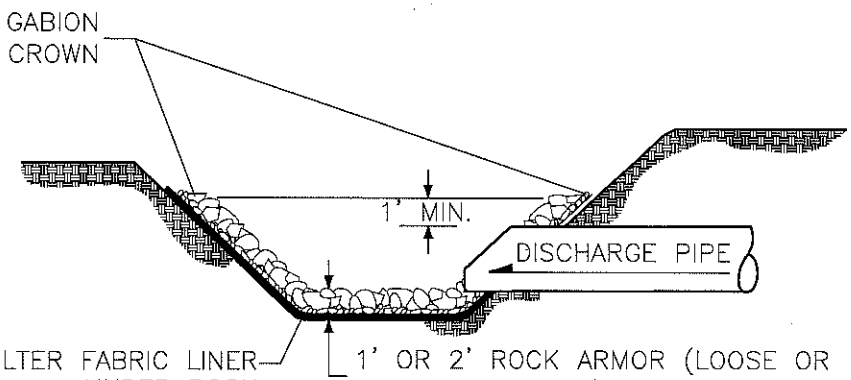


MINIMUM DIMENSIONS	
A_1 OR A_2+B	8' FOR ROCK LINING 12' FOR RIP RAP

PLAN
NTS



SECTION C–C
NTS



SECTION D–D
NTS

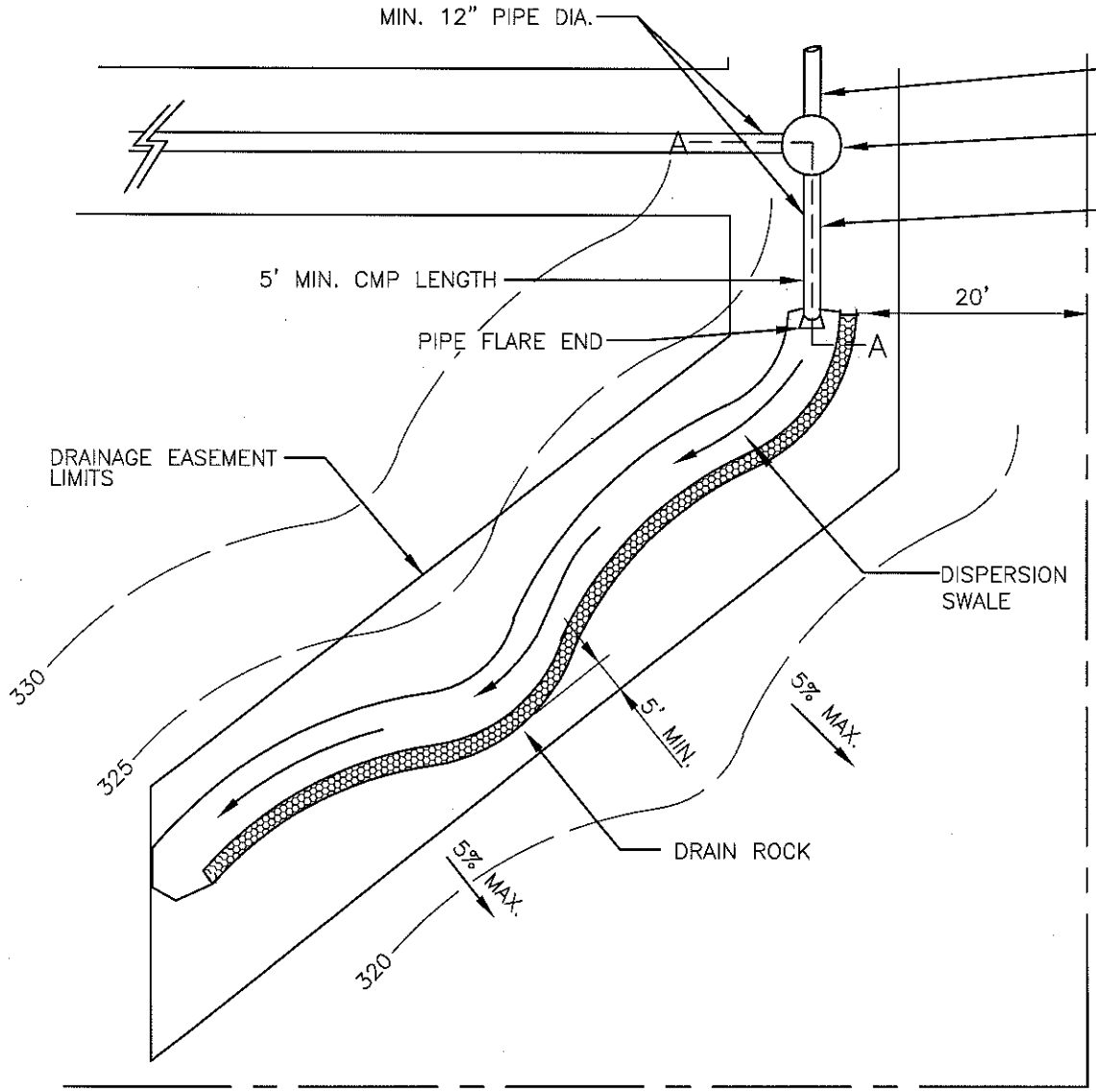
SNOHOMISH COUNTY PUBLIC WORKS

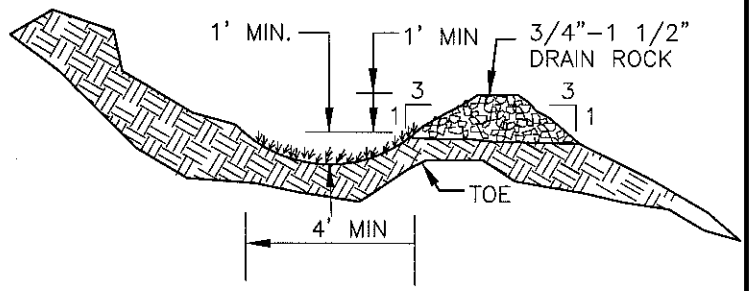
5–060 | PIPE/CULVERT OUTFALL DISCHARGE PROTECTION PAD

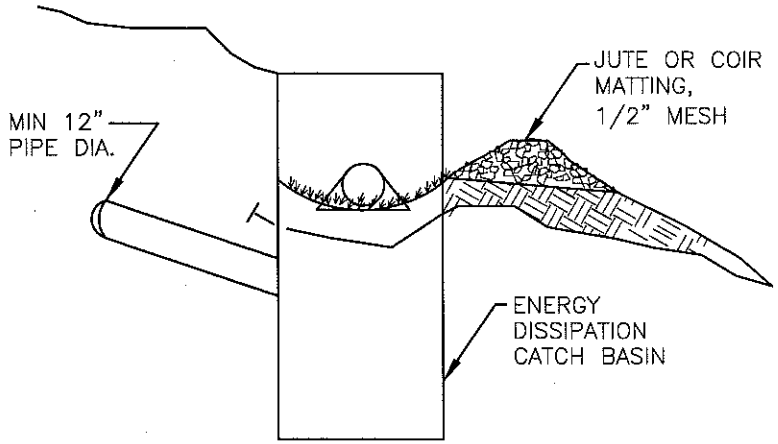
APPROVED BY:

COUNTY ROAD ENGINEER

9/23/10
DATE





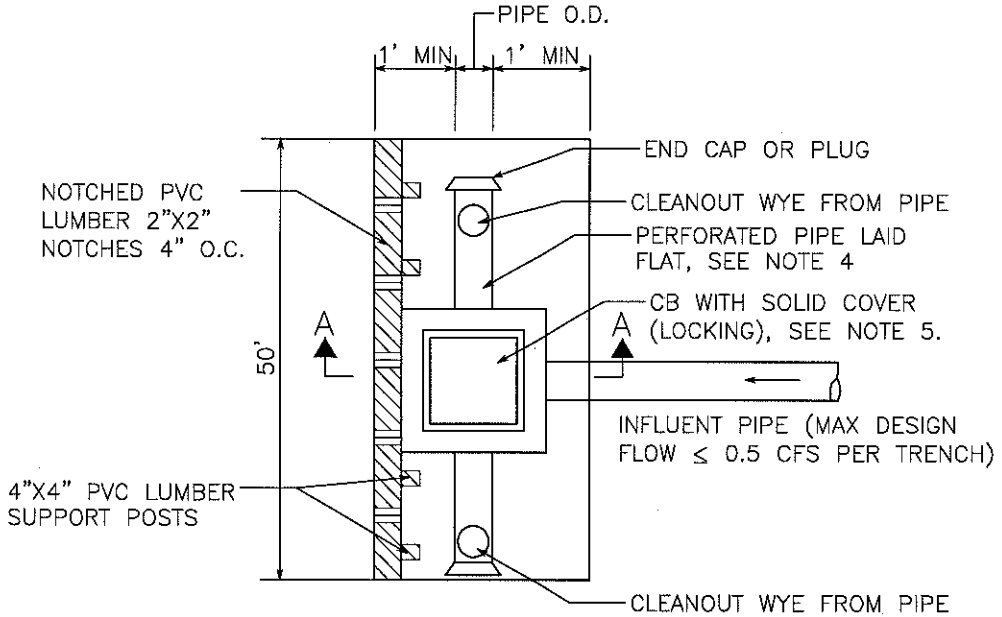


SECTION A–A

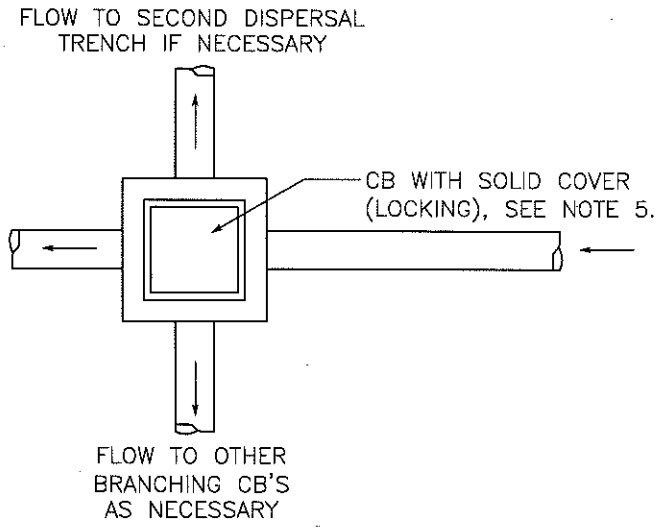
NOTES:

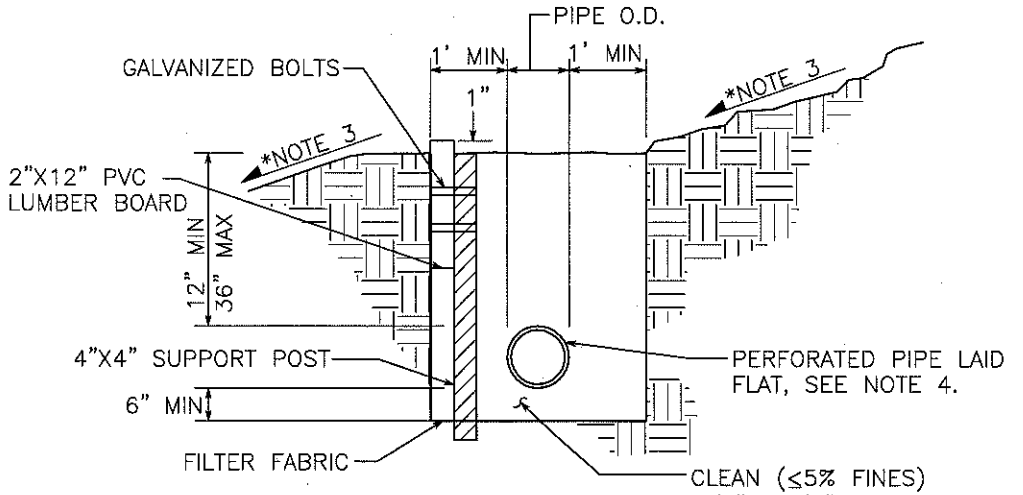
1. SEE TEXT SECTION 5–05.
2. MINIMUM SWALE LENGTH IS 10 FT DOWNSTREAM FROM SPREADER.

	SNOHOMISH COUNTY PUBLIC WORKS	APPROVED BY: 9/23/10
5–070	GRASS SWALE DISPERSION SYSTEM	COUNTY ROAD ENGINEER — DATE



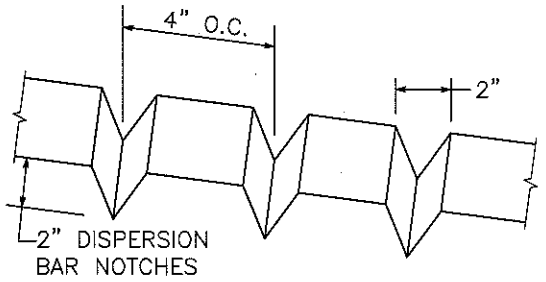
PLAN
NTS



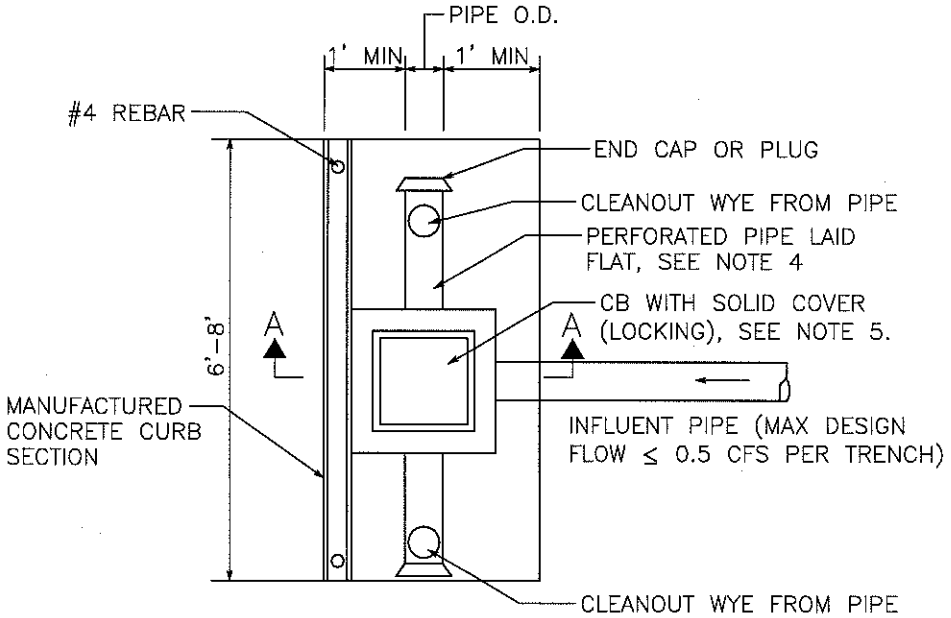


*15% MAX FOR FLOW CONTROL/WATER QUALITY TREATMENT IN RURAL AREAS.

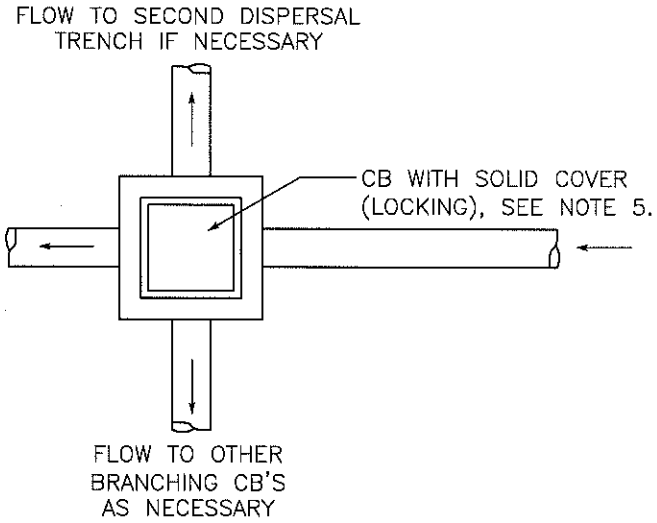
SECTION A–A
NTS

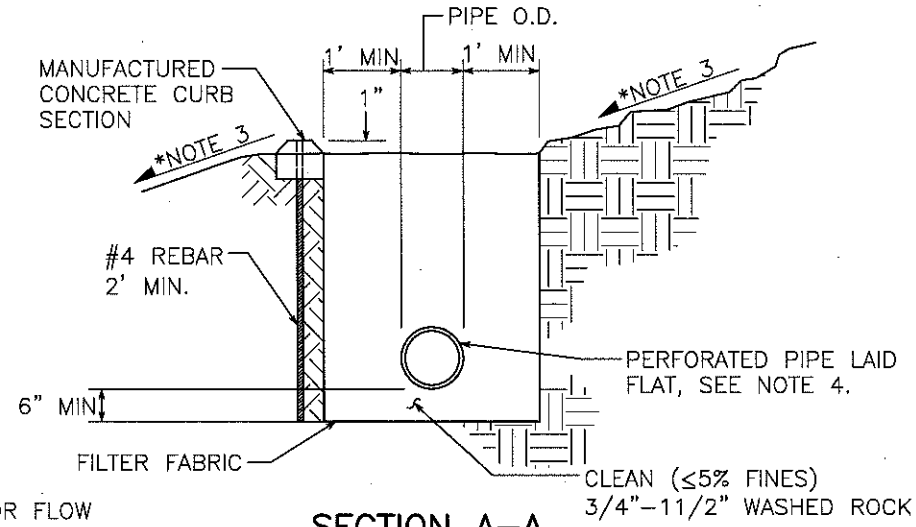


	SNOHOMISH COUNTY PUBLIC WORKS	APPROVED BY: 9/23/10
5–080A	LEVEL SPREADER TRENCH–PVC	COUNTY ROAD ENGINEER — DATE



PLAN
NTS





*15% MAX FOR FLOW CONTROL/WATER QUALITY TREATMENT IN RURAL AREAS.

SECTION A–A
NTS

SNOHOMISH COUNTY PUBLIC WORKS		APPROVED BY: 9/23/10
5–080B	LEVEL SPREADER TRENCH–CONCRETE	COUNTY ROAD ENGINEER DATE

NOTES:

1. TRENCH SHALL BE CONSTRUCTED TO PREVENT POINT DISCHARGE AND/OR EROSION.
2. MINIMUM SEPARATION BETWEEN TRENCHES SHALL BE 50 FT LATERALLY AND 100 FT ALONG THE DISCHARGE FLOWPATH.
3. SEE TEXT SECTION 5-05 FOR SLOPE SPECIFICATIONS.
4. PERFORATED PIPE MINIMUM DIAMETERS:
   - 4 IN. FOR TRENCH SERVING 1 DWELLING UNIT.
   - 6 IN. FOR 2 DWELLING UNITS.
   - 8 IN. FOR 3 DWELLING UNITS.
   - 12 IN. FOR 4 OR MORE DWELLING UNITS.
5. TYPE 1 CB MAY BE USED FOR TRENCH SERVING 1-3 DWELLING UNITS. TYPE 2 CB IS REQUIRED FOR 4 OR MORE DWELLING UNITS FOR ENERGY DISSIPATION.

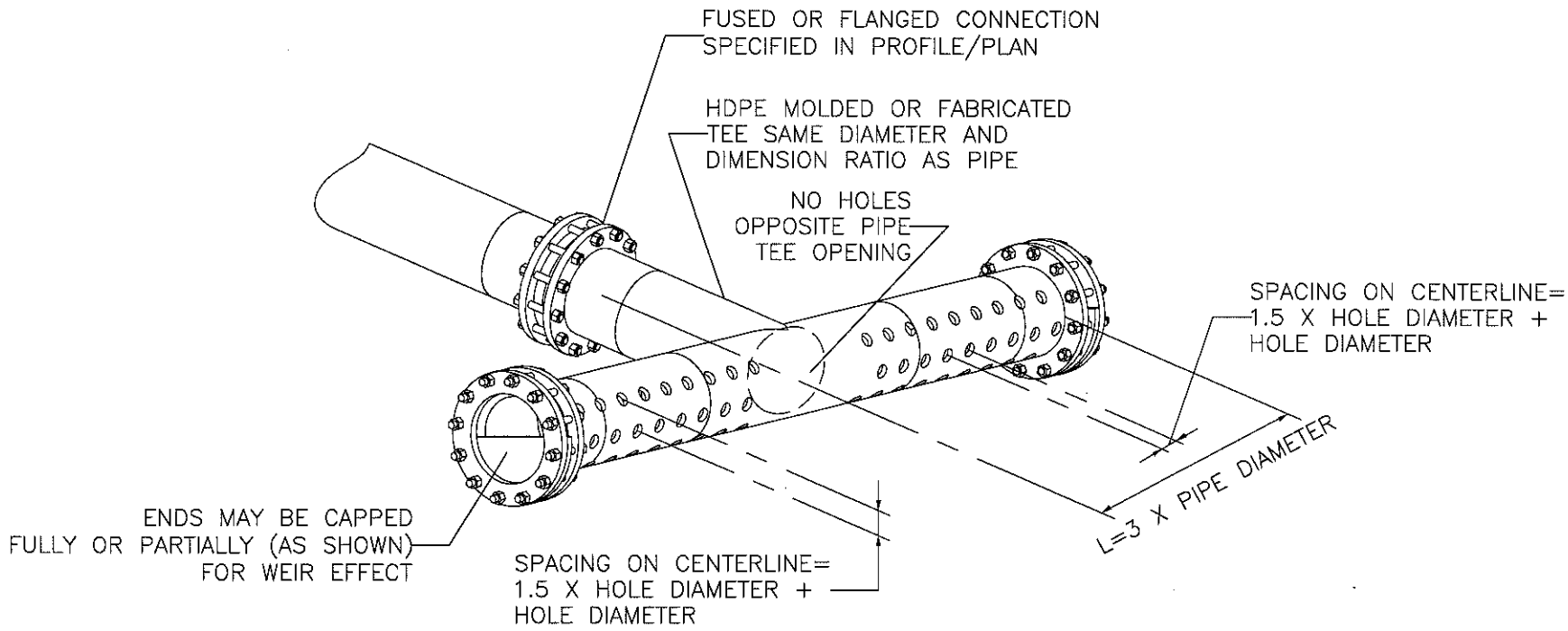
PVC LUMBER OPTION (STD DWG 5-080A):

6. TRENCH AND PVC LUMBER DISPERSION BAR MUST BE LEVEL. ALIGN TO FOLLOW CONTOURS OF SITE.
7. PVC LUMBER SUPPORT POST SPACING SHALL BE 4 FT MAXIMUM, ON CENTER, UNLESS SOIL CONDITIONS ALLOW WIDER SPACING.

CONCRETE WHEEL STOP/CURB OPTION (STD DWG 5-080B):

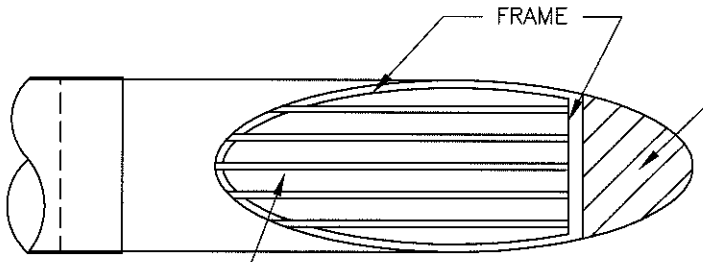
6. TRENCH AND CONCRETE WHEEL STOP OR CURB SECTIONS MUST BE LEVEL. ALIGN TO FOLLOW CONTOURS OF SITE.
7. EACH CURB SECTION SHALL BE ANCHORED AT EACH END BY A #4 REBAR ROD AT LEAST 2 FT LONG. EACH ROD SHALL BE BENT 90 DEGREES AT 2 INCHES FROM THE TOP END TO PREVENT CURB MOVEMENT.
8. JOINTS BETWEEN THE CONCRETE WHEEL STOP OR CURB SECTIONS SHALL BE MORTARED.

	SNOHOMISH COUNTY PUBLIC WORKS	APPROVED BY:
5-080C	LEVEL SPREADER TRENCH NOTES	COUNTY ROAD ENGINEER — DATE 9/23/10



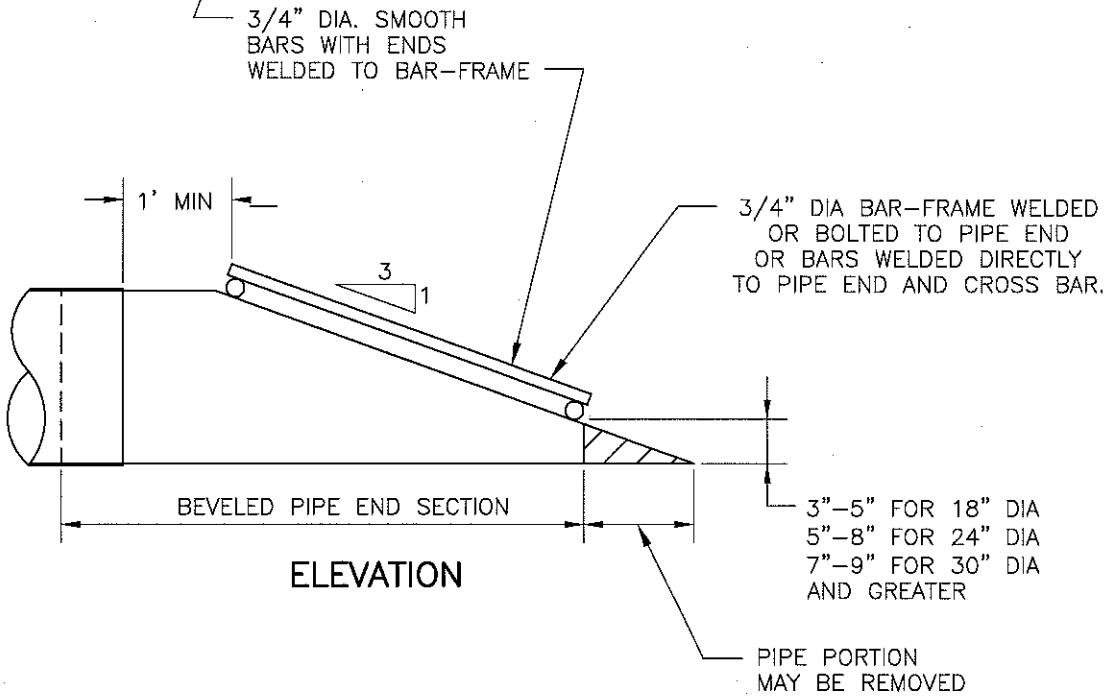
DRILL HOLES IN FRONT HALF OF TEE ONLY.
HOLE DIAMETER (INCHES) =
TEE PIPE DIAMETER DIVIDED BY 6
(EX.: 6 INCH TEE = 1 INCH HOLES
18 INCH TEE = 3 INCH HOLES)

	SNOHOMISH COUNTY PUBLIC WORKS	APPROVED BY: 9/23/10
5–085	DIFFUSER TEE	COUNTY ROAD ENGINEER — DATE

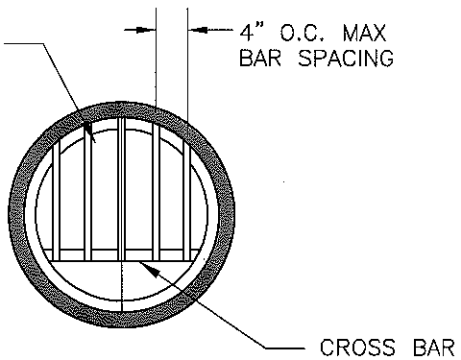


PLAN VIEW

NOTES:
1. CMP END SECTIONS SHOWN.
2. ALL PARTS SHALL BE ALUMINUM OR STAINLESS STEEL.



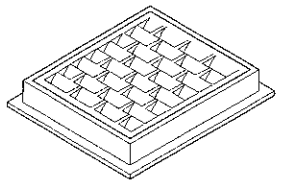
ELEVATION



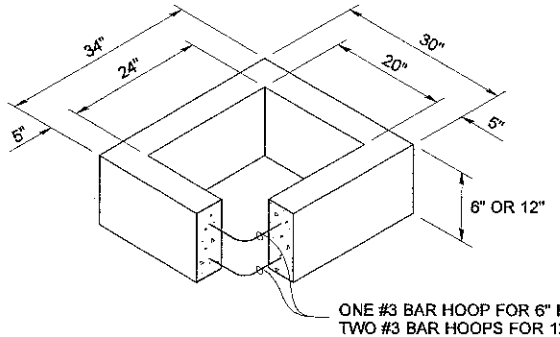
END VIEW

SNOHOMISH COUNTY PUBLIC WORKS		APPROVED BY:
5-090	DEBRIS BARRIER	COUNTY ROAD ENGINEER — DATE 9/23/10

DRAWN BY: MARK SUIKA



FRAME AND VANED GRATE



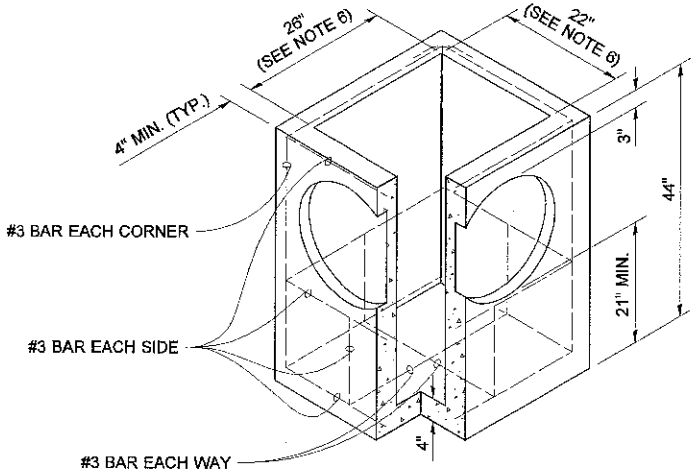
RECTANGULAR ADJUSTMENT SECTION

PIPE ALLOWANCES	
PIPE MATERIAL	**MAXIMUM INSIDE DIAMETER**
REINFORCED OR PLAIN CONCRETE	12"
ALL METAL PIPE	15"
CPSSP * (STD. SPEC. 9-05.20)	12"
SOLID WALL PVC (STD. SPEC. 9-05.12(1))	15"
PROFILE WALL PVC (STD. SPEC. 9-05.12(2))	15"

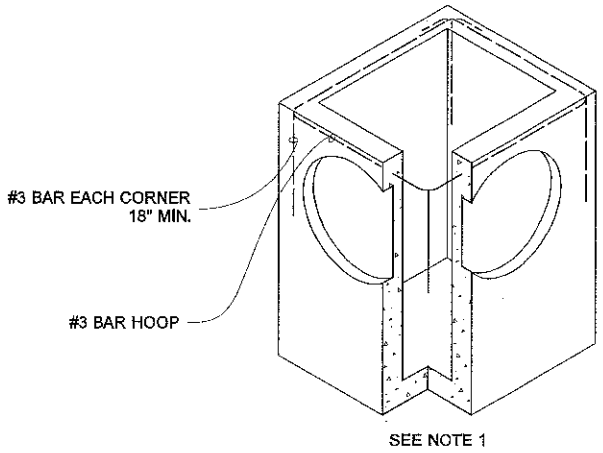
* CORRUGATED POLYETHYLENE STORM SEWER PIPE

NOTES

1. As acceptable alternatives to the rebar shown in the **PRECAST BASE SECTION**, fibers (placed according to the Standard Specifications), or wire mesh having a minimum area of 0.12 square inches per foot shall be used with the minimum required rebar shown in the **ALTERNATIVE PRECAST BASE SECTION**. Wire mesh shall not be placed in the knockouts.
2. The knockout diameter shall not be greater than 20". Knockouts shall have a wall thickness of 2" minimum to 2.5" maximum. Provide a 1.5" minimum gap between the knockout wall and the outside of the pipe. After the pipe is installed, fill the gap with joint mortar in accordance with Standard Specification 9-04.3.
3. The maximum depth from the finished grade to the lowest pipe invert shall be 5'.
4. The frame and grate may be installed with the flange up or down. The frame may be cast into the adjustment section.
5. The Precast Base Section may have a rounded floor, and the walls may be sloped at a rate of 1:24 or steeper.
6. The opening shall be measured at the top of the precast base section.
7. All pickup holes shall be grouted full after the basin has been placed.

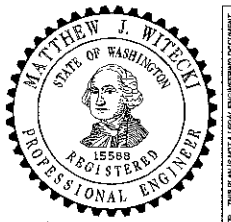


PRECAST BASE SECTION



SEE NOTE 1

ALTERNATIVE PRECAST BASE SECTION



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CATCH BASIN TYPE 1

STANDARD PLAN B-5.20-00

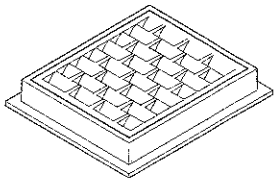
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

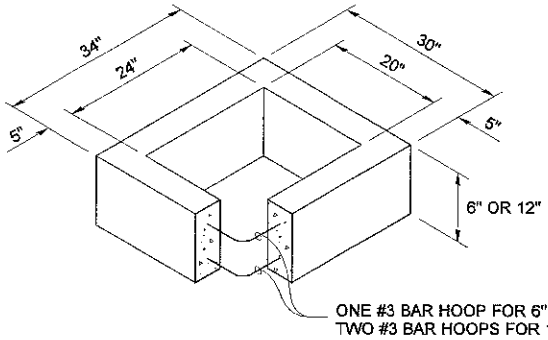
Harold J. Peterfeso — STATE DESIGN ENGINEER — *06-01-06* — DATE

Washington State Department of Transportation

DRAWN BY: MARK SUIKA



FRAME AND VANED GRATE



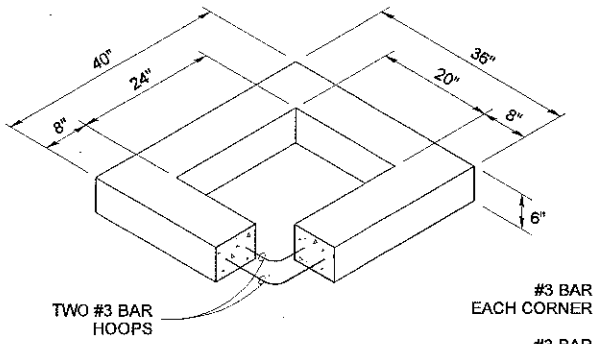
RECTANGULAR ADJUSTMENT SECTION

PIPE ALLOWANCES	
PIPE MATERIAL	**MAXIMUM INSIDE DIAMETER**
REINFORCED OR PLAIN CONCRETE	18"
ALL METAL PIPE	21"
CPSSP * (STD. SPEC. 9-05.20)	18"
SOLID WALL PVC (STD. SPEC. 9-05.12(1))	21"
PROFILE WALL PVC (STD. SPEC. 9-05.12(2))	21"

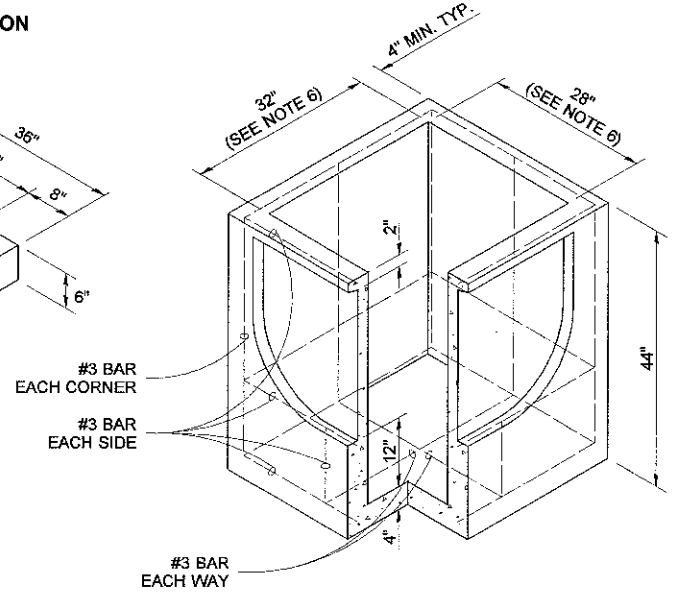
* CORRUGATED POLYETHYLENE STORM SEWER PIPE

NOTES

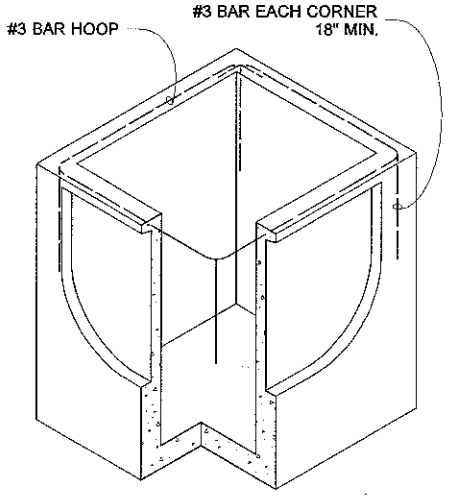
1. As acceptable alternatives to the rebar shown in the **PRECAST BASE SECTION**, fibers (placed according to the Standard Specifications), or wire mesh having a minimum area of 0.12 square inches per foot shall be used with the minimum required rebar shown in the **ALTERNATIVE PRECAST BASE SECTION**. Wire mesh shall not be placed in the knockouts.
2. The knockout diameter shall not be greater than 26". Knockouts shall have a wall thickness of 2" minimum to 2.5" maximum. Provide a 1.5" minimum gap between the knockout wall and the outside of the pipe. After the pipe is installed, fill the gap with joint mortar in accordance with Standard Specification 9-04.3.
3. The maximum depth from the finished grade to the lowest pipe invert shall be 5'.
4. The frame and grate may be installed with the flange up or down. The frame may be cast into the adjustment section.
5. The Precast Base Section may have a rounded floor, and the walls may be sloped at a rate of 1:24 or steeper.
6. The opening shall be measured at the top of the precast base section.
7. All pickup holes shall be grouted full after the basin has been placed.



REDUCING SECTION



PRECAST BASE SECTION



SEE NOTE 1

ALTERNATIVE PRECAST BASE SECTION

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CATCH BASIN TYPE 1L

STANDARD PLAN B-5.40-00

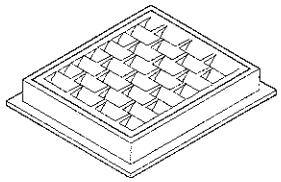
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

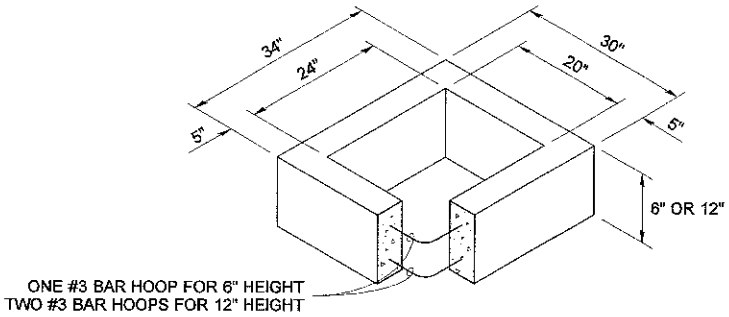
Harold J. Peterfeso — STATE DESIGN ENGINEER — *06-01-06* — DATE

Washington State Department of Transportation

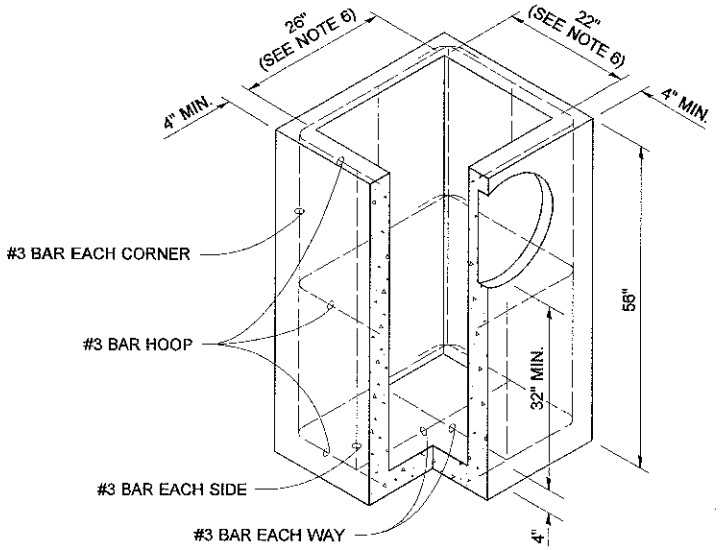
DRAWN BY: MARK SUJKA



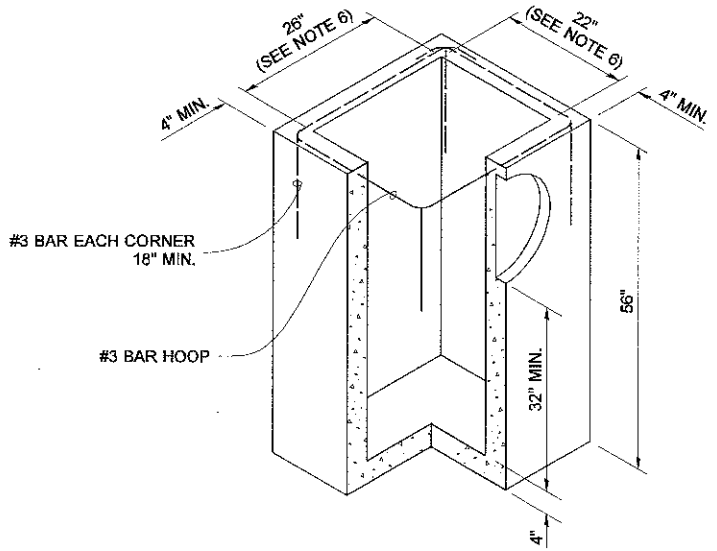
FRAME AND VANED GRATE



RECTANGULAR ADJUSTMENT SECTION



PRECAST BASE SECTION

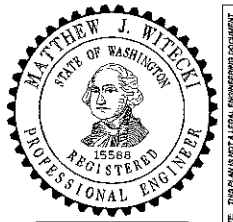


SEE NOTE 1

ALTERNATIVE PRECAST BASE SECTION

NOTES

1. As acceptable alternatives to the rebar shown in the **PRECAST BASE SECTION**, fibers (placed according to the Standard Specifications), or wire mesh having a minimum area of 0.12 square inches per foot shall be used with the minimum required rebar shown in the **ALTERNATIVE PRECAST BASE SECTION**. Wire mesh shall not be placed in the knockouts.
2. The knockout diameter shall not be greater than 18". Knockouts shall have a wall thickness of 2" minimum to 2.5" maximum. Provide a 1.5" minimum gap between the knockout wall and the outside of the pipe. After the pipe is installed, fill the gap with joint mortar in accordance with Standard Specification 9-04.3.
3. The maximum depth from the finished grade to the lowest pipe invert shall be 5'.
4. The frame and grate may be installed with the flange up or down. The frame may be cast into the adjustment section.
5. The Precast Base Section may have a rounded floor, and the walls may be sloped at a rate of 1:24 or steeper.
6. The opening shall be measured at the top of the precast base section.
7. All pickup holes shall be grouted full after the basin has been placed.



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CATCH BASIN TYPE 1P
(FOR PARKING LOT)

STANDARD PLAN B-5.60-00

SHEET 1 OF 1 SHEET

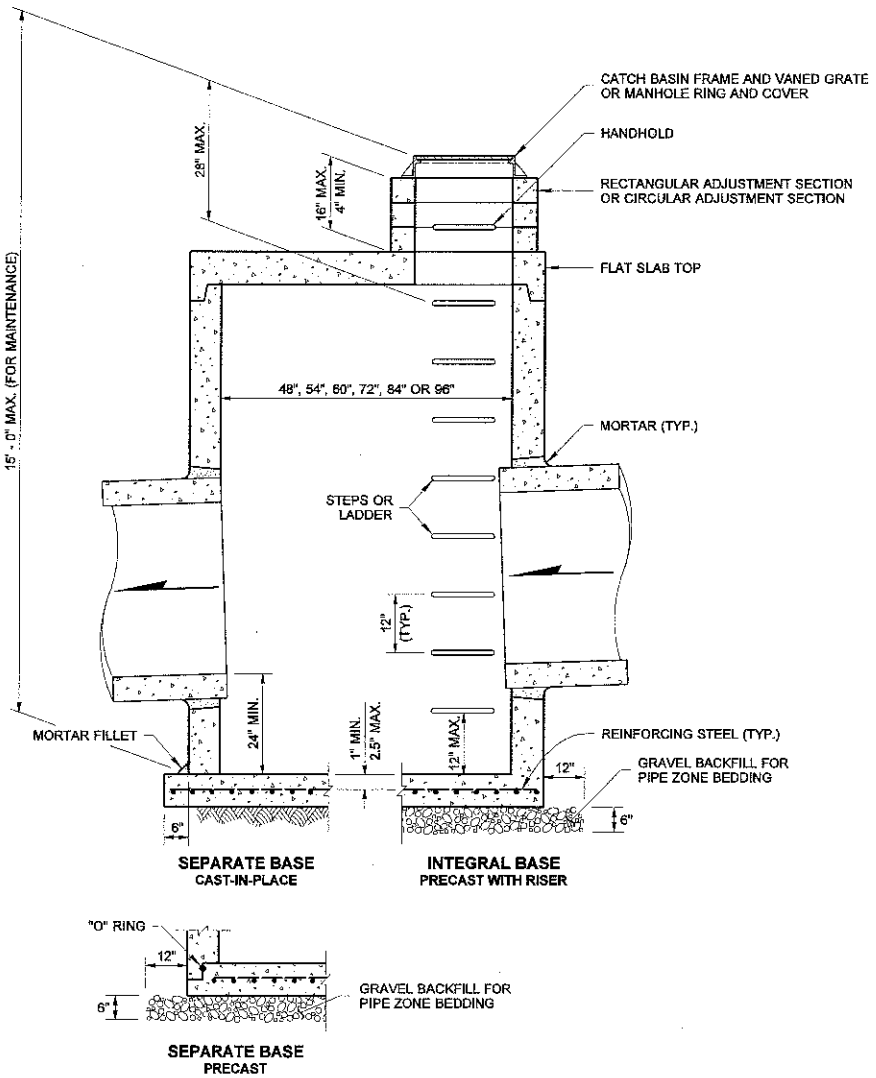
APPROVED FOR PUBLICATION

Harold J. Peterfeso *06-01-06*

STATE DESIGN ENGINEER — DATE

Washington State Department of Transportation

DRAWN BY: ADAM COCHRAN



NOTES

1. No steps are required when height is 4' or less.
2. The bottom of the precast catch basin may be sloped to facilitate cleaning.
3. The rectangular frame and grate may be installed with the flange up or down. The frame may be cast into the adjustment section.
4. Knockouts shall have a wall thickness of 2" minimum to 2.5" maximum. Provide a 1.5" minimum gap between the knockout wall and the outside of the pipe. After the pipe is installed, fill the gap with joint mortar in accordance with Standard Specification 9-04.3.

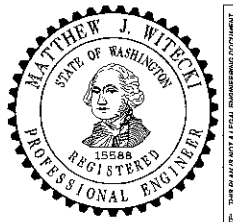
CATCH BASIN DIMENSIONS

CATCH BASIN DIAMETER	WALL THICKNESS	BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS	BASE REINFORCING STEEL in^2/ft. IN EACH DIRECTION	
					SEPARATE BASE	INTEGRAL BASE
48"	4"	6"	36"	8"	0.23	0.15
54"	4.5"	8"	42"	8"	0.19	0.19
60"	5"	8"	48"	8"	0.25	0.25
72"	6"	8"	60"	12"	0.35	0.24
84"	8"	12"	72"	12"	0.39	0.29
96"	8"	12"	84"	12"	0.39	0.29

PIPE ALLOWANCES

CATCH BASIN DIAMETER	PIPE MATERIAL WITH MAXIMUM INSIDE DIAMETER				
	CONCRETE	ALL METAL	CPSSP ①	SOLID WALL PVC ②	PROFILE WALL PVC ③
48"	24"	30"	24"	27"	30"
54"	30"	36"	30"	27"	36"
60"	36"	42"	36"	36"	42"
72"	42"	54"	42"	36"	48"
84"	54"	60"	54"	36"	48"
96"	60"	72"	60"	36"	48"

① Corrugated Polyethylene Storm Sewer Pipe (Std. Spec. 9-05.20)
② (Std. Spec. 9-05.12(1))
③ (Std. Spec. 9-05.12(2))



CATCH BASIN TYPE 2

STANDARD PLAN B-10.20-00

SHEET 1 OF 1 SHEET

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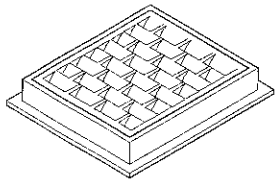
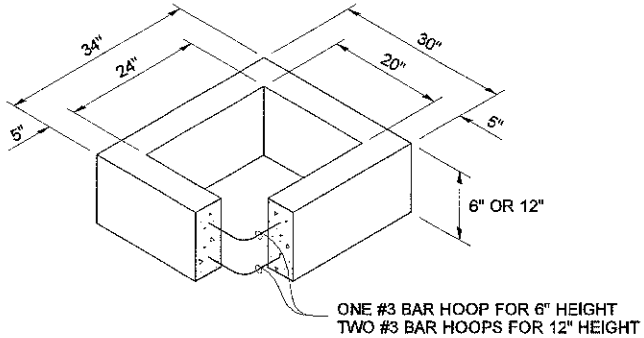
Washington State Department of Transportation

DRAWN BY: MARK SUJKA



FRAME AND VANED GRATE



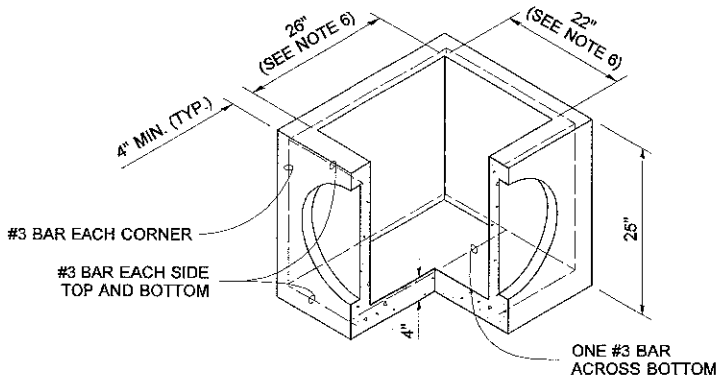
RECTANGULAR ADJUSTMENT SECTION

PIPE ALLOWANCES	
PIPE MATERIAL	**MAXIMUM INSIDE DIAMETER**
REINFORCED OR PLAIN CONCRETE	12"
ALL METAL PIPE	15"
CPSSP * (STD. SPEC. 9-05.20)	12"
SOLID WALL PVC (STD. SPEC. 9-05.12(1))	15"
PROFILE WALL PVC (STD. SPEC. 9-05.12(2))	15"

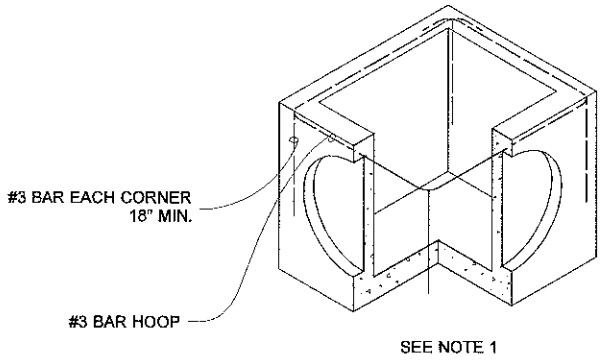
* CORRUGATED POLYETHYLENE STORM SEWER PIPE

NOTES

1. As acceptable alternatives to the rebar shown in the **PRECAST BASE SECTION**, fibers (placed according to the Standard Specifications), or wire mesh having a minimum area of 0.12 square inches per foot shall be used with the minimum required rebar shown in the **ALTERNATIVE PRECAST BASE SECTION.** Wire mesh shall not be placed in the knockouts.
2. The knockout diameter shall not be greater than 18". Knockouts shall have a wall thickness of 2" minimum to 2.5" maximum. Provide a 1.5" minimum gap between the knockout wall and the outside of the pipe. After the pipe is installed, fill the gap with joint mortar in accordance with Standard Specification 9-04.3.
3. The maximum depth from the finished grade to the lowest pipe invert shall be 5'.
4. The frame and grate may be installed with the flange up or down. The frame may be cast into the adjustment section.
5. The Precast Base Section may have a rounded floor, and the walls may be sloped at a rate of 1:24 or steeper.
6. The opening shall be measured at the top of the precast base section.
7. All pickup holes shall be grouted full after the inlet has been placed.

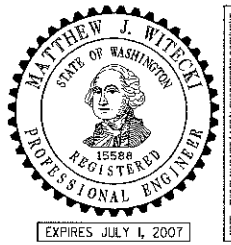


PRECAST BASE SECTION



SEE NOTE 1

ALTERNATIVE PRECAST BASE SECTION



CONCRETE INLET

STANDARD PLAN B-25.60-00

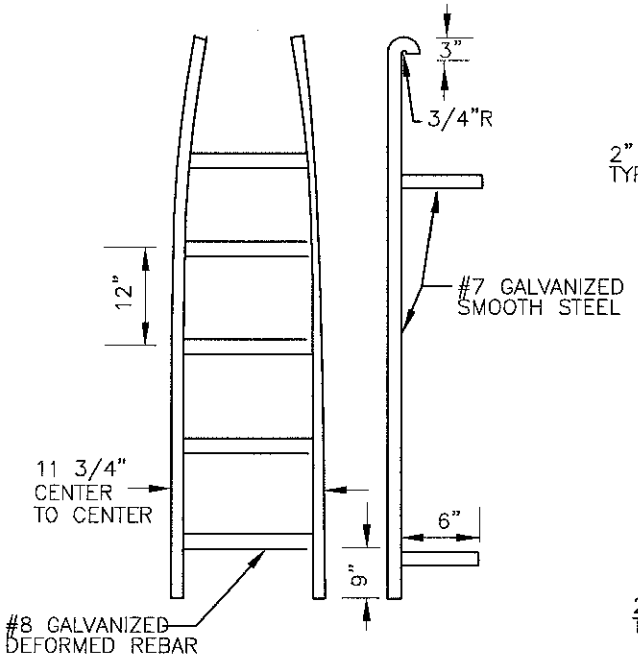
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

Harold J. Peterfeso 06-01-06

STATE DESIGN ENGINEER DATE

Washington State Department of Transportation



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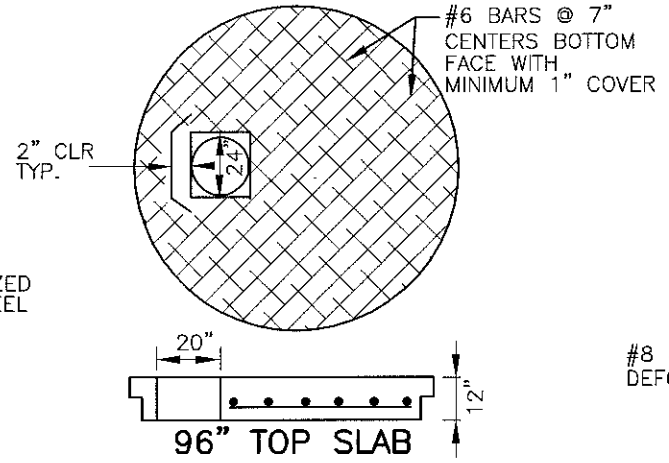
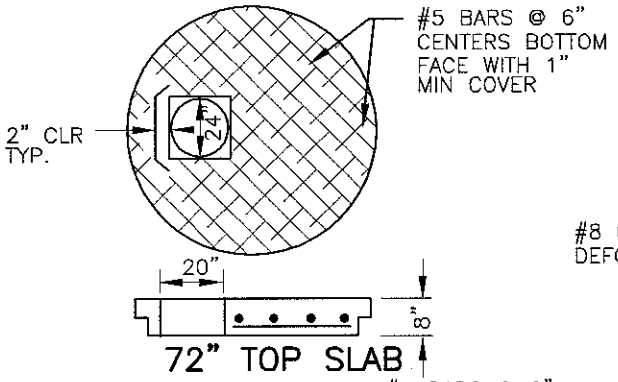
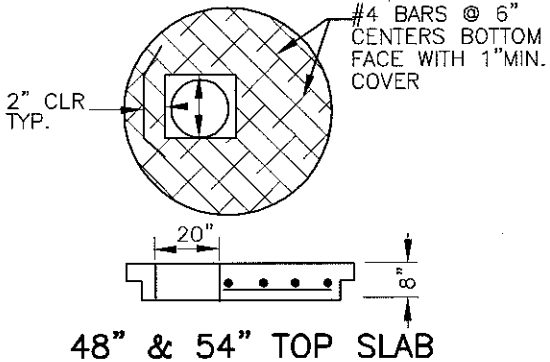


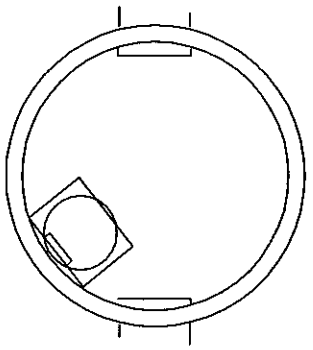
96" TOP SLAB

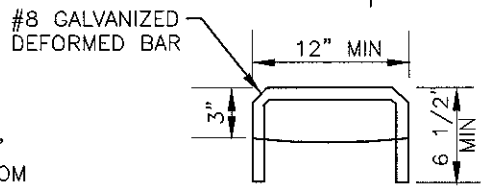


72" TOP SLAB

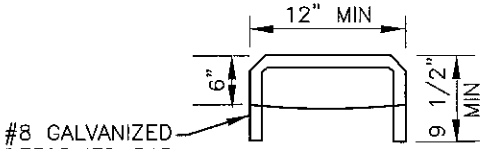


48" & 54" TOP SLAB

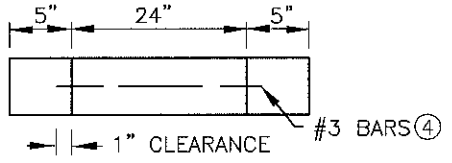


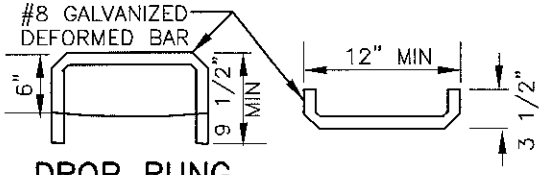


HANDHOLD



CATCHBASIN STEP





DROP RUNG CATCHBASIN STEP

NOTES:

1. PROPRIETARY CATCHBASIN STEPS ARE ACCEPTABLE, PROVIDED THEY CONFORM TO SECTION R, ASTM C 478 (AASHTO M 199) AND MEET ALL WISHA REQUIREMENTS.

2. CATCHBASIN STEP LEGS SHALL BE PARALLEL OR APPROXIMATELY RADIAL AT THE OPTION OF THE MANUFACTURER, EXCEPT THAT ALL STEPS IN ANY CATCH BASIN SHALL BE SIMILAR. PENETRATION OF OUTER WALL BY LEG IS PROHIBITED.

3. SLAB OPENING MAY BE 24" X 20" OR 24" DIAMETER.

4. AS AN ACCEPTABLE ALTERNATIVE TO REBAR, WELDED WIRE FABRIC HAVING A MINIMUM AREA OF 0.12 SQUARE INCHES PER FOOT MAY BE USED. WELDED WIRE FABRIC SHALL COMPLY TO ASTM A 497 (AASHTO M 221).

SEE TEXT SECTION 5-07

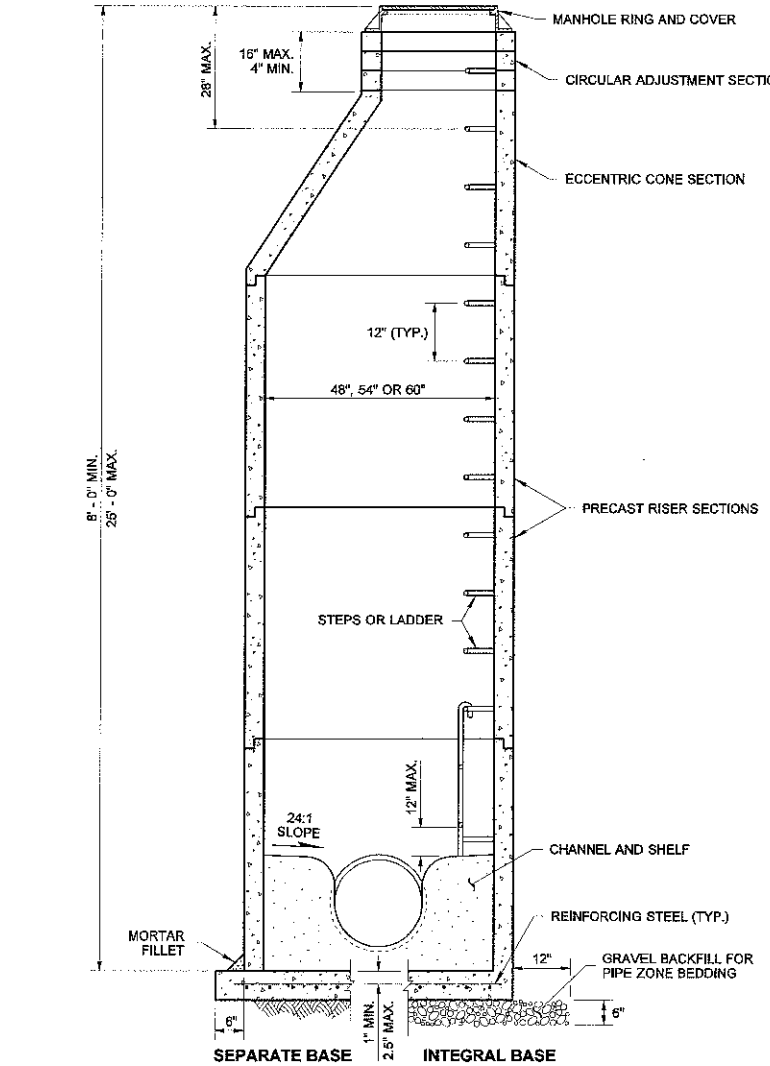
SNOHOMISH COUNTY PUBLIC WORKS

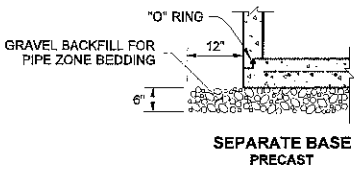
5-120 | CATCHBASIN DETAILS

APPROVED BY: _____ 9/23/10

COUNTY ROAD ENGINEER | DATE

DRAWN BY: ADAM COCHRAN

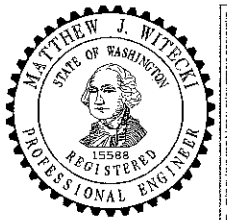




NOTE

Knockouts shall have a wall thickness of 2" minimum to 2.5" maximum.

MANHOLE DIMENSION TABLE						
DIAM.	WALL THICKNESS	BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS	BASE REINFORCING STEEL in^2/ft. IN EACH DIRECTION	
					SEPARATE BASE	INTEGRAL BASE
48"	4"	6"	36"	8"	0.23	0.15
54"	4.5"	8"	42"	8"	0.19	0.19
60"	5"	8"	48"	8"	0.25	0.25



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MANHOLE TYPE 1

STANDARD PLAN B-15.20-00

SHEET 1 OF 1 SHEET

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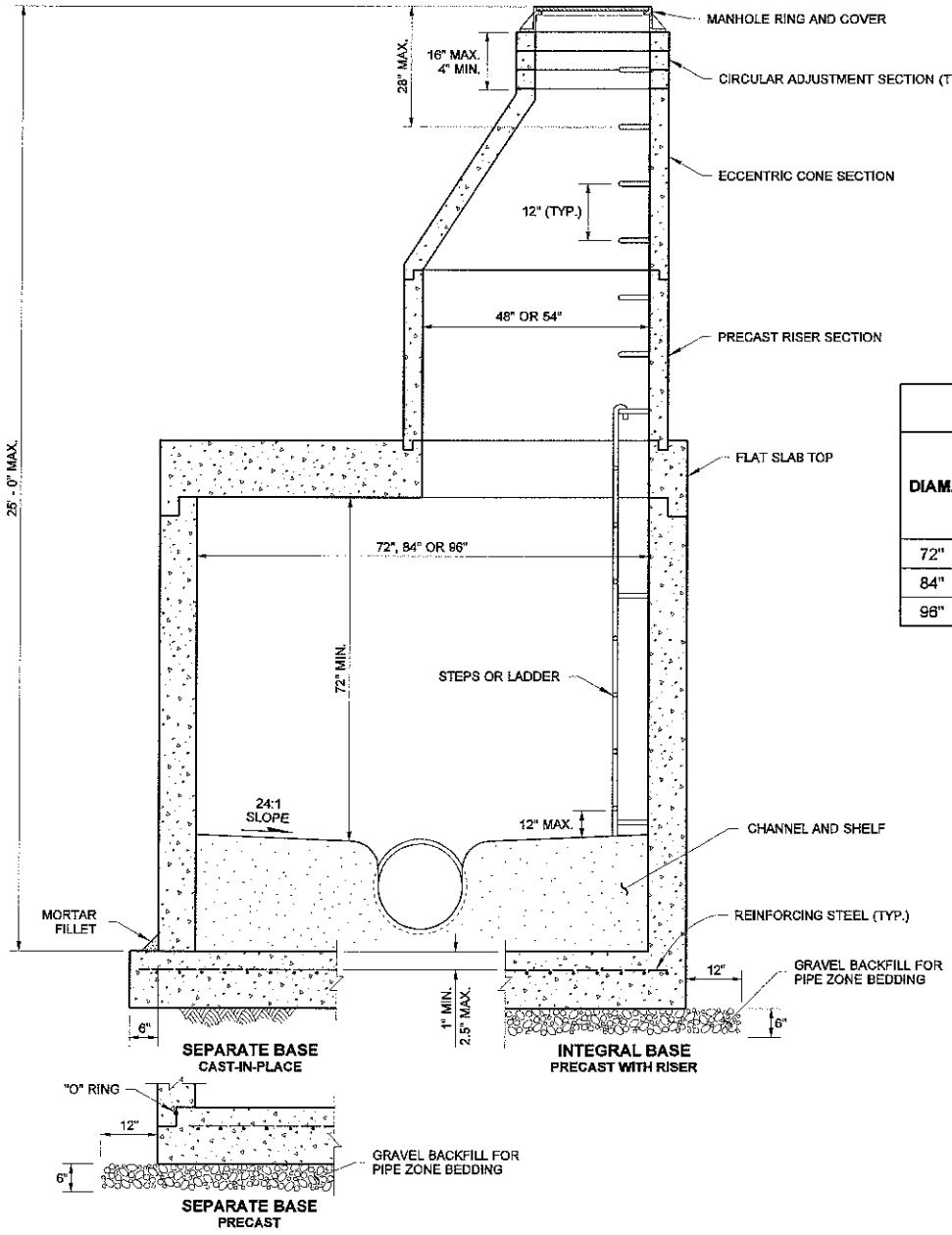

NOTE

Knockouts shall have a wall thickness of 2" minimum to 2.5" maximum.

MANHOLE DIMENSION TABLE

DIAM.	WALL THICKNESS	BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS	BASE REINFORCING STEEL in^2/ft. IN EACH DIRECTION	
					SEPARATE BASE	INTEGRAL BASE
72"	6"	8"	60"	12"	0.35	0.24
84"	8"	12"	72"	12"	0.39	0.29
96"	8"	12"	84"	12"	0.39	0.29

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MANHOLE TYPE 2

STANDARD PLAN B-15.40-00

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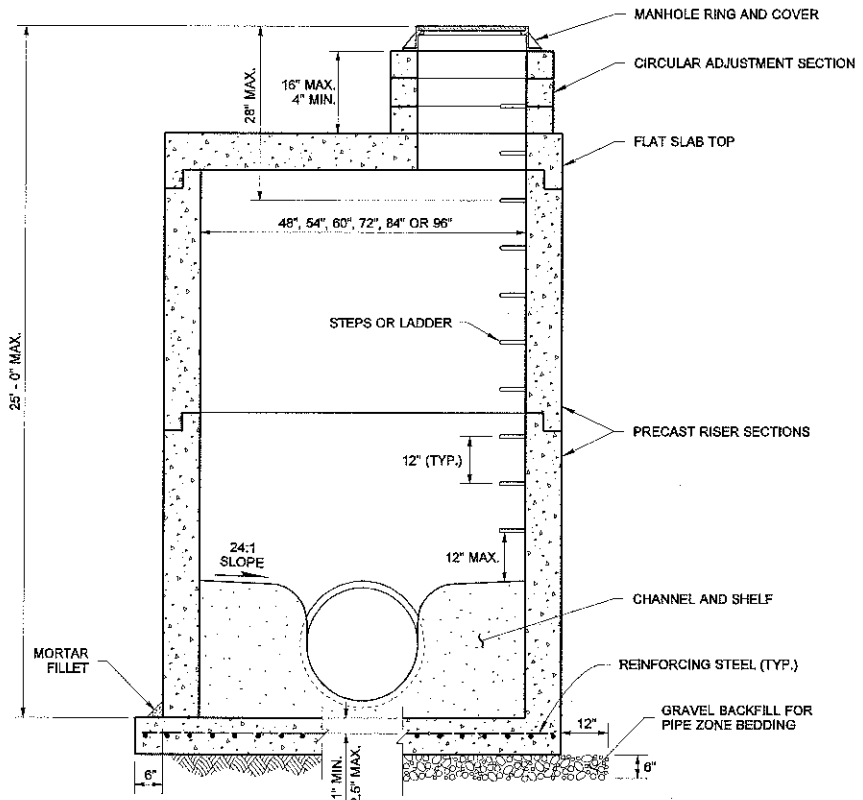
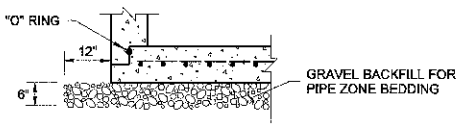




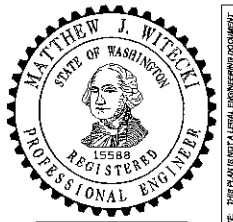
SEPARATE BASE
PRECAST

NOTE

Knockouts shall have a wall thickness of 2" minimum to 2.5" maximum.

MANHOLE DIMENSION TABLE

DIAM.	WALL THICKNESS	BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS	BASE REINFORCING STEEL in^2 /ft. IN EACH DIRECTION	
					SEPARATE BASE	INTEGRAL BASE
48"	4"	6"	36"	8"	0.23	0.15
54"	4.5"	8"	42"	8"	0.19	0.19
60"	5"	8"	48"	8"	0.25	0.25
72"	6"	8"	60"	12"	0.35	0.24
84"	8"	12"	72"	12"	0.39	0.29
96"	8"	12"	84"	12"	0.39	0.29



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MANHOLE TYPE 3

STANDARD PLAN B-15.60-00

SHEET 1 OF 1 SHEET

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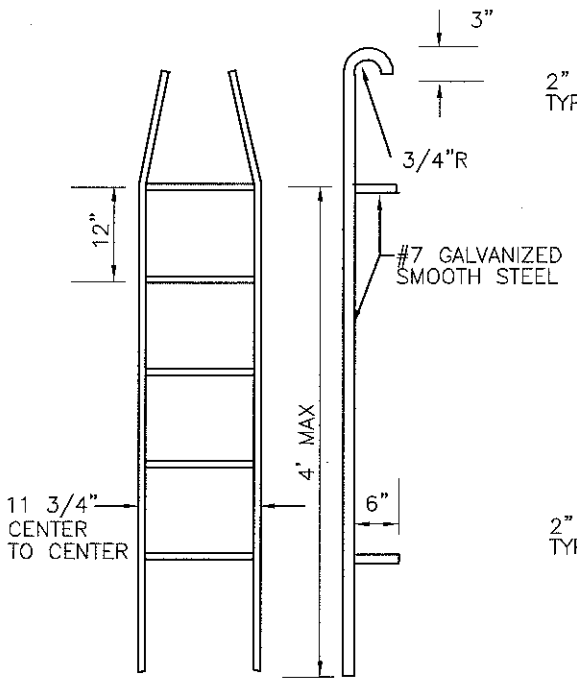
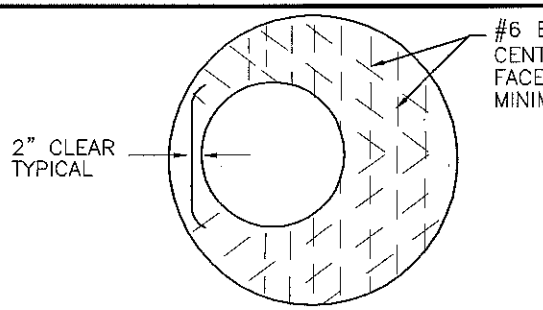
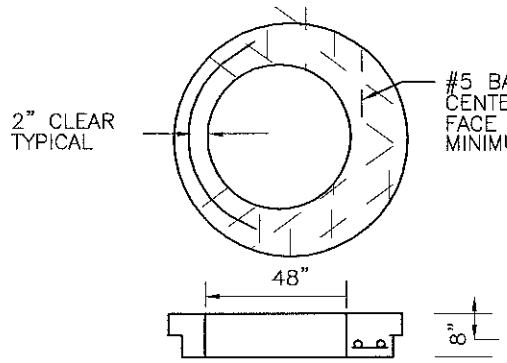
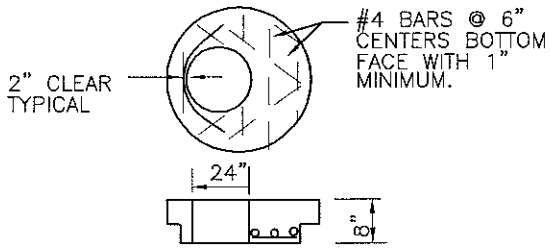




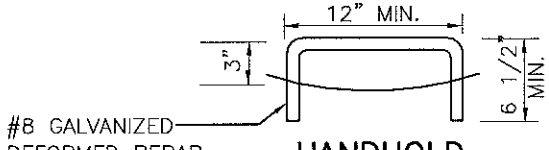
96" TOP SLAB



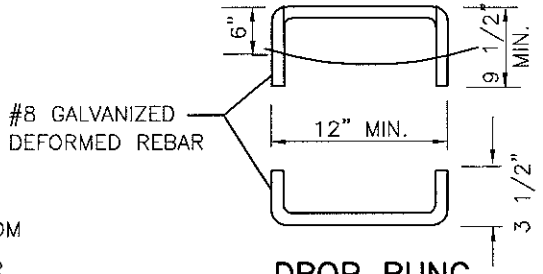
72" TOP SLAB



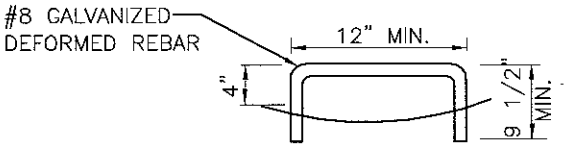
48" & 54" TOP SLAB



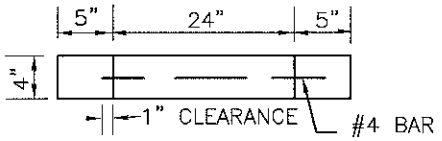
HANDHOLD



DROP RUNG
MANHOLE STEP



MANHOLE STEP



GRADE RING

NOTES:

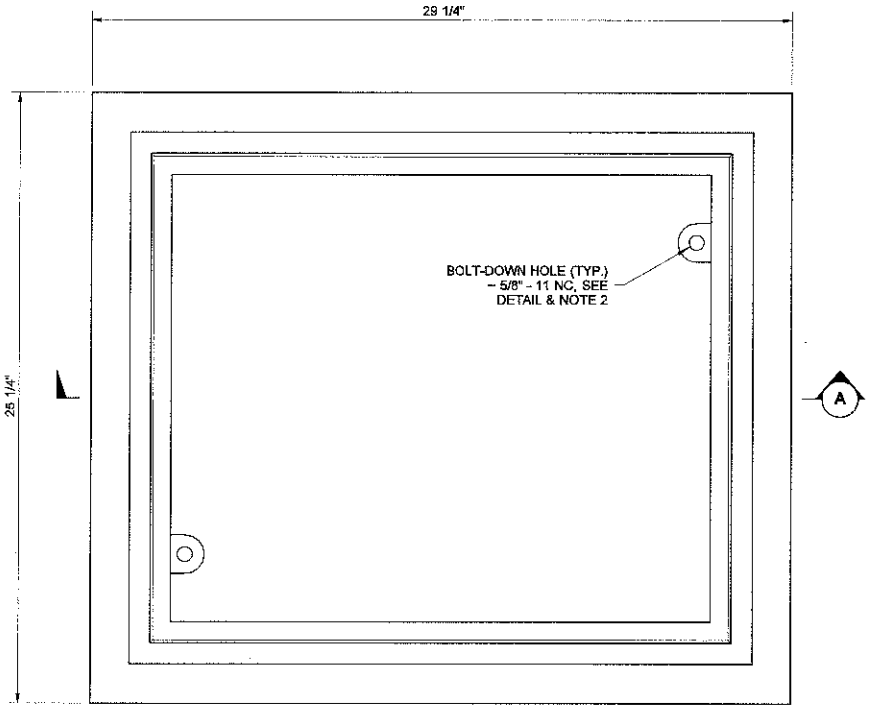
1. PROPRIETARY MANHOLE STEPS ARE ACCEPTABLE PROVIDED THAT THEY CONFORM TO SECTION R, ASTM C 478 (AASHTO M 199) AND MEET ALL WISHA REQUIREMENTS.

2. MANHOLE STEP LEGS SHALL BE PARALLEL OR APPROXIMATELY RADIAL AT THE OPTON OF THE MANUFACTURER, EXCEPT THAT ALL STEPS IN ANY MANHOLE SHALL BE SIMILAR. PENETRATION OF OUTER WALL BY A LEG IS PROHIBITED.

SEE TEXT SECTION 5-07

SNOHOMISH COUNTY PUBLIC WORKS		APPROVED BY:	
5-170	MANHOLE DETAILS	COUNTY ROAD ENGINEER	DATE 9/23/10

DRAWN BY: MARK SUJKA



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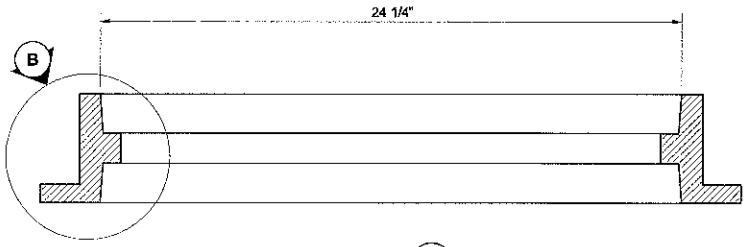
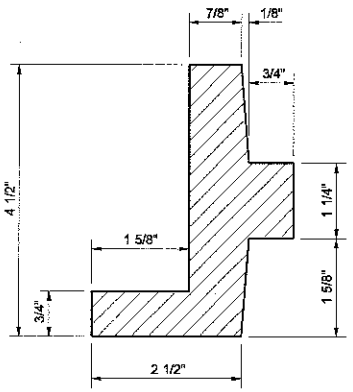


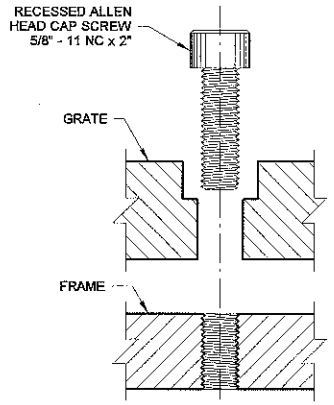
SECTION (A)

NOTES

1. This frame is designed to accommodate 20" × 24" grates or covers as shown on Standard Plans B-30.20, B-30.30, B-30.40 and B-30.50.
2. When bolt-down grates or covers are specified in the Contract, provide two holes in the frame that are vertically aligned with the grate or cover slots. Tap each hole to accept a 5/8" - 11 NC × 2" allen head cap screw. Location of bolt down holes varies among different manufacturers.
3. Refer to Standard Specification 9-05.15(2) for additional requirements.

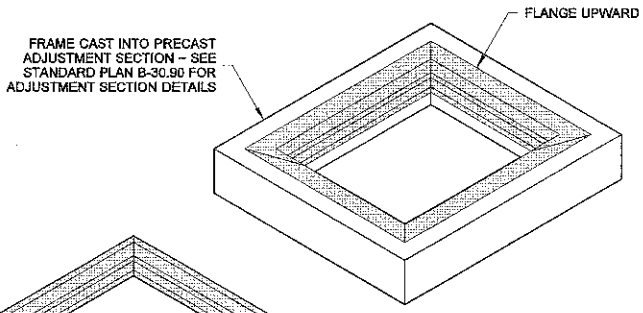


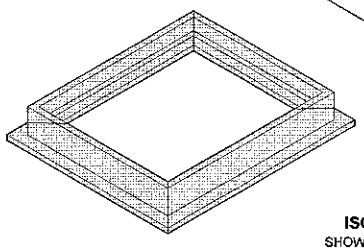
DETAIL (B)



SECTION

BOLT-DOWN DETAIL
SEE NOTE 2





ISOMETRIC VIEW
SHOWING THE VARIATIONS

RECTANGULAR FRAME (REVERSIBLE)

STANDARD PLAN B-30.10-00

SHEET 1 OF 1 SHEET

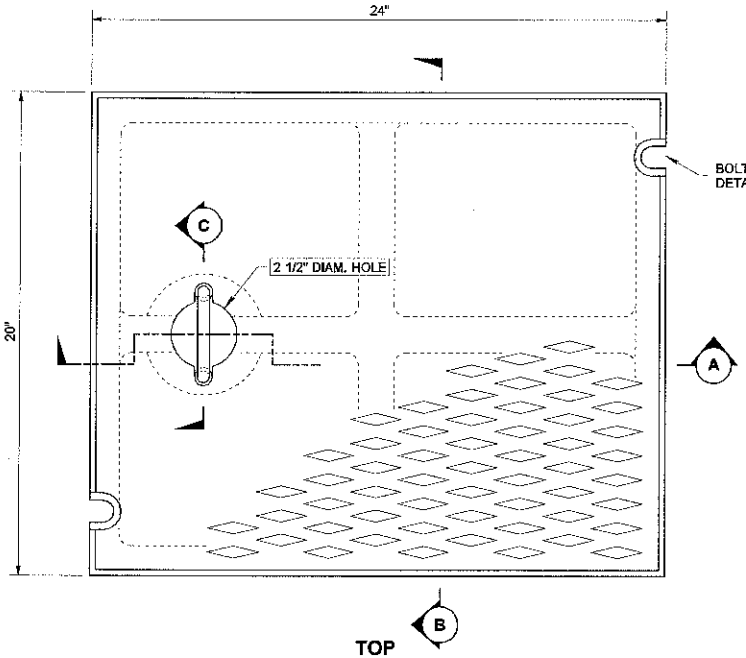
APPROVED FOR PUBLICATION

Harold J. Peterfeso *06-08-06*

STATE DESIGN ENGINEER — DATE

Washington State Department of Transportation

DRAWN BY: MARK SUJKA



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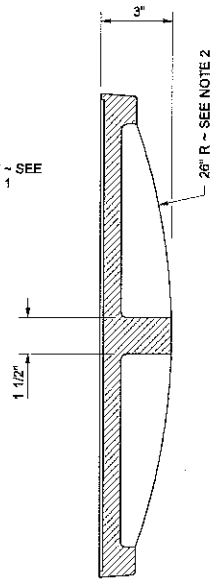
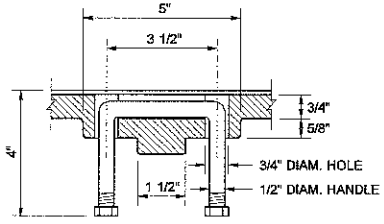


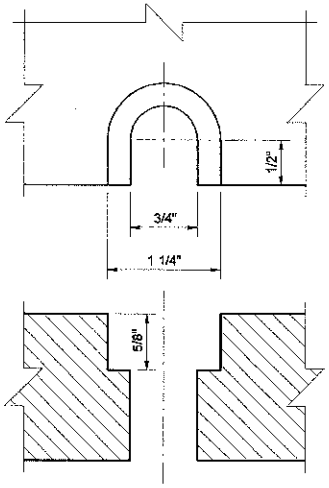
SECTION (B)

NOTES

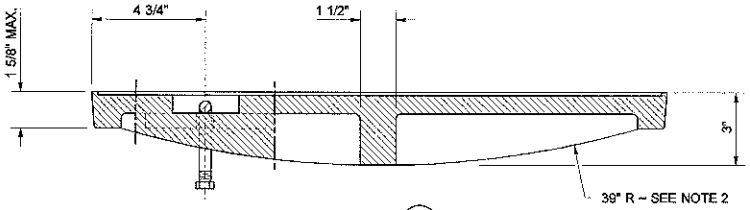
1. When bolt-down covers are specified in the Contract, provide two slots in the cover that are vertically aligned with the holes in the frame. Location of bolt-down slots varies among different manufacturers.
2. Alternative reinforcing designs are acceptable in lieu of the rib design.
3. Refer to Standard Specification 9-05.15(2) for additional requirements.
4. For frame details, see Standard Plan B-30.10.



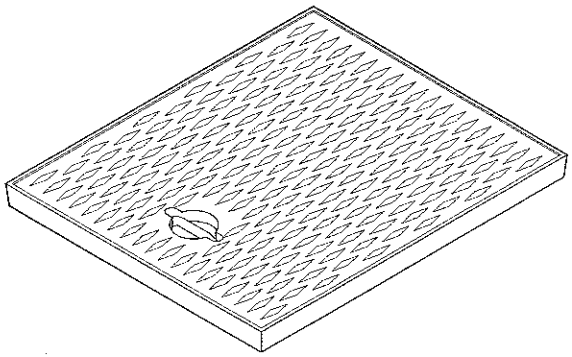
SECTION (C)



BOLT-DOWN SLOT DETAIL
SEE NOTE 1



SECTION (A)



ISOMETRIC

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RECTANGULAR SOLID METAL COVER

STANDARD PLAN B-30.20-01

SHEET 1 OF 1 SHEET

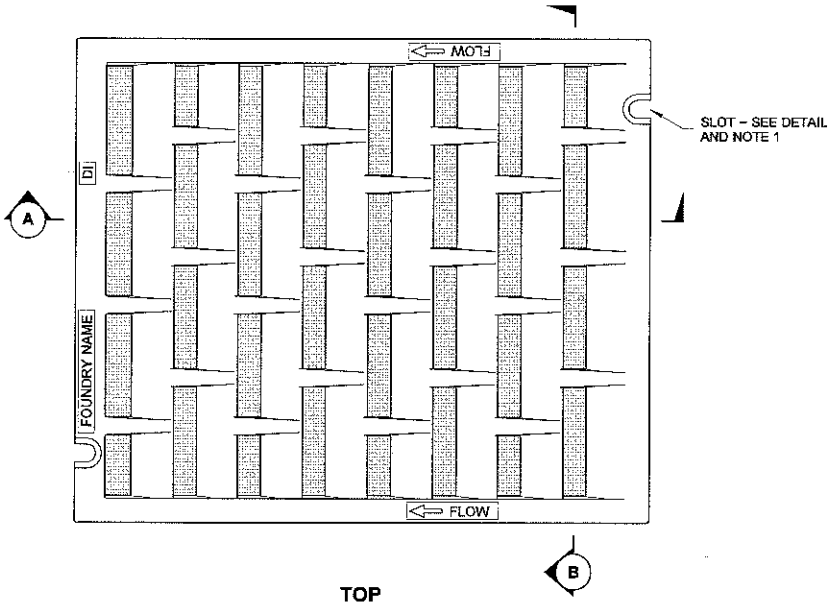
APPROVED FOR PUBLICATION

Kevin J. Dayton — *11-21-06*

STATE DESIGN ENGINEER — DATE

Washington State Department of Transportation

DRAWN BY: MARK SUJKA



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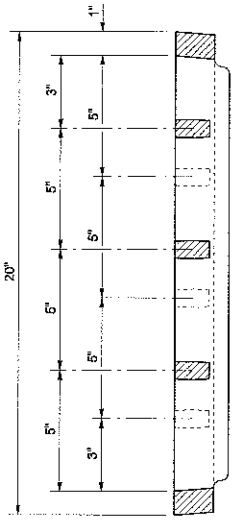
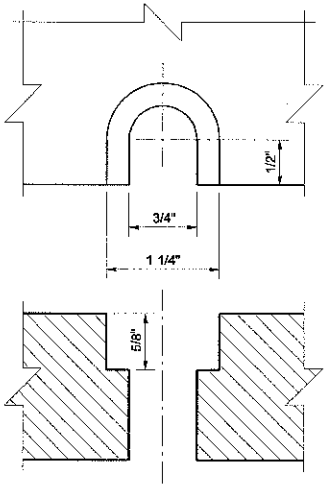


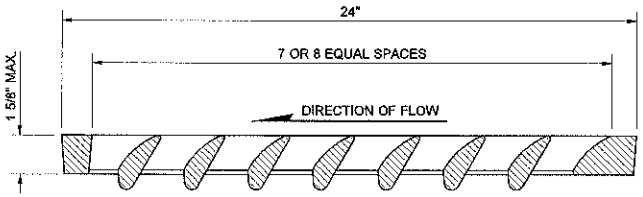
SECTION (B)

NOTES

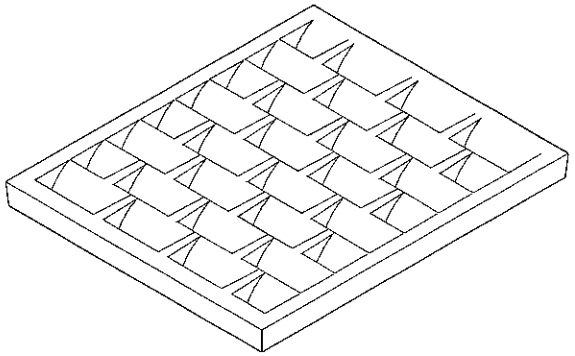
1. When bolt-down grates are specified in the Contract, provide two slots in the grate that are vertically aligned with the holes in the frame. Location of bolt-down slots varies among different manufacturers.
2. Refer to Standard Specification 9-05.15(2) for additional requirements.
3. For Frame details, see Standard Plan B-30.10.



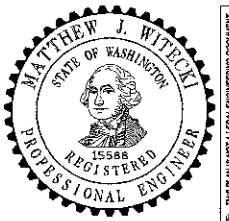
BOLT-DOWN SLOT DETAIL
SEE NOTE 1



SECTION (A)



ISOMETRIC



EXPIRES JULY 1, 2007

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RECTANGULAR VANED GRATE

STANDARD PLAN B-30.30-00

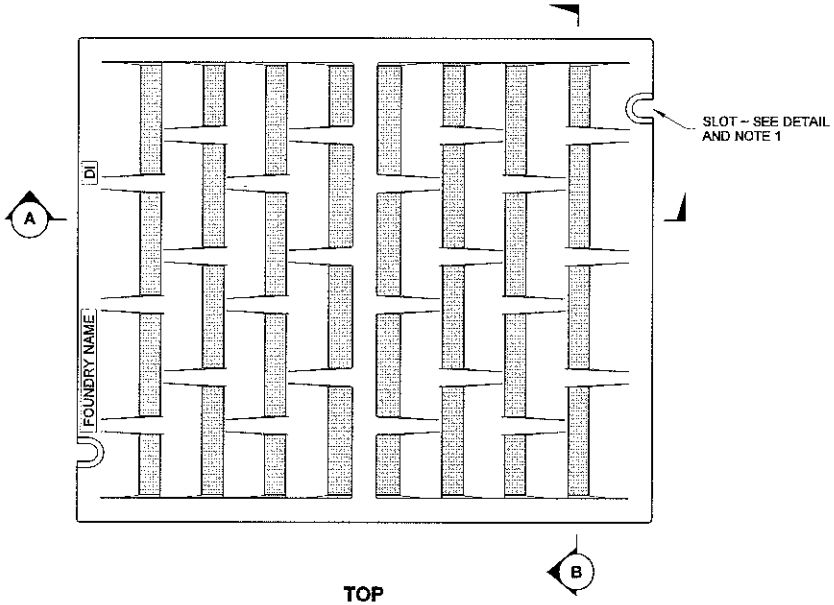
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

Harold J. Peterfeso — STATE DESIGN ENGINEER — *06-01-06* — DATE

Washington State Department of Transportation

DRAWN BY: MARK SUJKA



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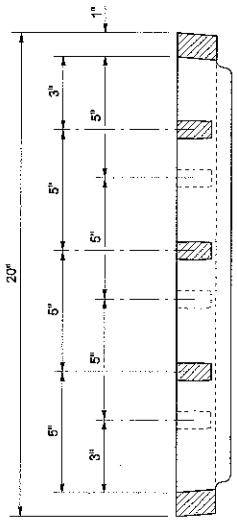
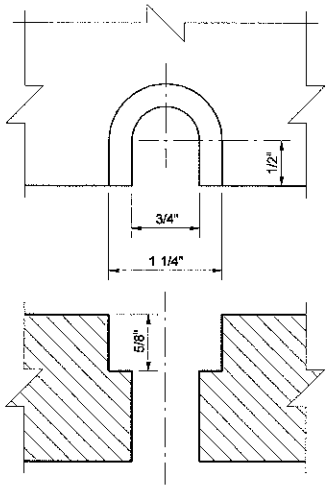


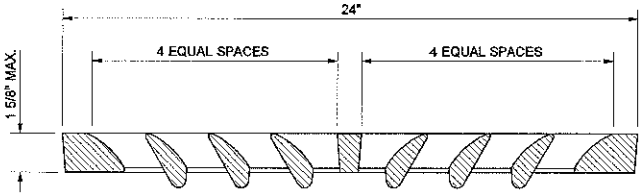
SECTION (B)

NOTES

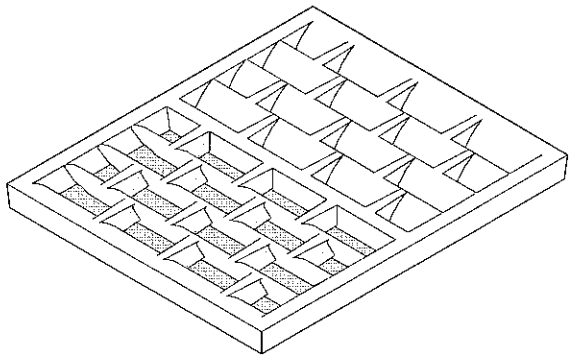
1. When bolt-down grates are specified in the Contract, provide two slots in the grate that are vertically aligned with the holes in the frame. Location of bolt-down slots varies among different manufacturers.
2. Refer to Standard Specification 9-05.15(2) for additional requirements.
3. For Frame details, see Standard Plan B-30.10.



BOLT-DOWN SLOT DETAIL
SEE NOTE 1



SECTION (A)



ISOMETRIC

EXPIRES JULY 1, 2007

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RECTANGULAR BI-DIRECTIONAL VANED GRATE

STANDARD PLAN B-30.40-00

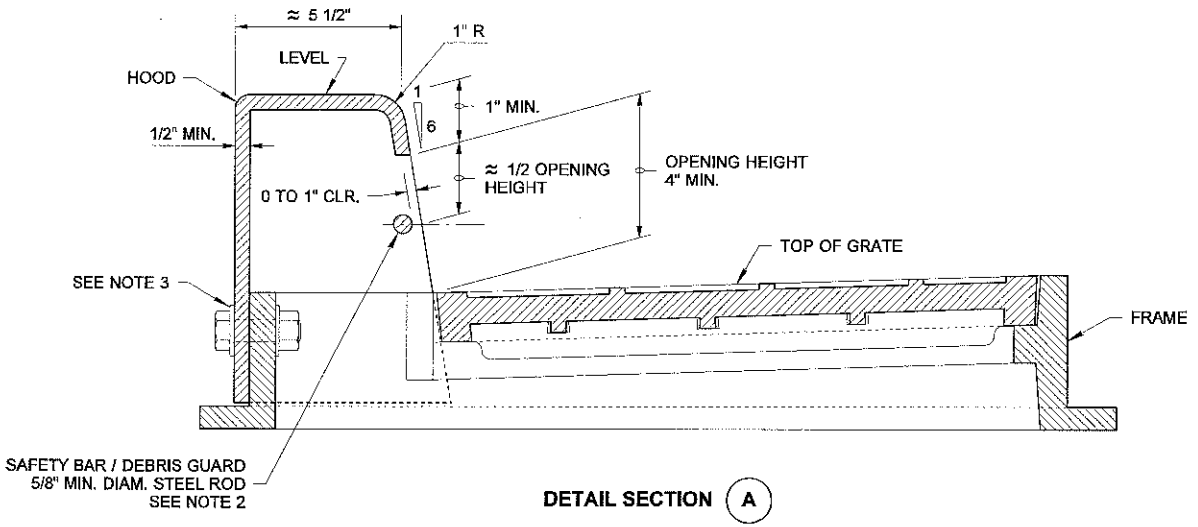
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

Harold J. Peterfeso — STATE DESIGN ENGINEER — *06-01-06* — DATE

Washington State Department of Transportation

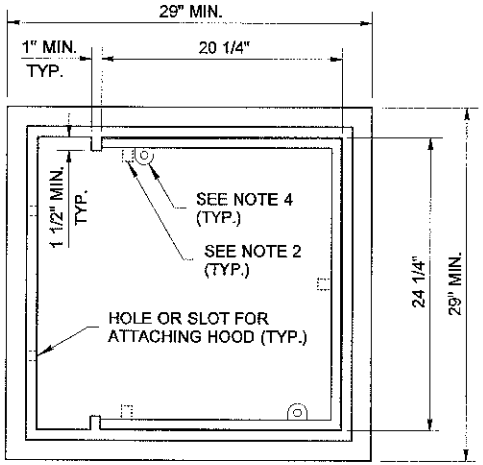
DRAWN BY: MARK SUJKA



DETAIL SECTION (A)

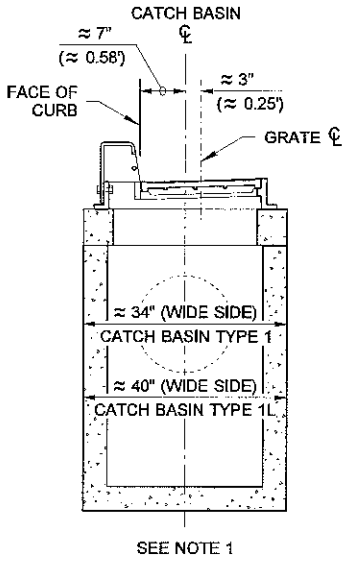
NOTES

1. The asymmetry of the Combination Inlet shall be considered when calculating the offset distance for the catch basin. See **SECTION A.**
2. The dimensions of the Frame and Hood may vary slightly among different manufacturers. The Frame may have cast features intended to support a grate guard. Hood units shall mount outside of the Frame. The methods for fastening the Safety Bar / Debris Guard Rod to the Hood may vary. The Hood may include casting lugs. The top of the Hood may be cast with a pattern.
3. Attach the Hood to the frame with two 3/4" × 2" hex head bolts, nuts, and oversize washers. The washers shall have diameters adequate to assure full bearing across the slots.
4. When bolt-down grates are specified in the contract, provide two holes in the frame that are vertically aligned with the grate slots. Tap each hole to accept a 5/8" × - 11 NC × 2" allen head cap screw. Location of bolt-down holes varies among different manufacturers. See **BOLT- DOWN DETAIL** , Standard Plan B-30.10.
5. Only ductile iron Vaned Grates shall be used. See Standard Plans B-30.30 and B-30.40 for grate details. Refer to Standard Specification 9-05.15(2) for additional requirements.
6. This plan is intended to show the installation details of a manufactured product. It is not the intent of this plan to show the specific details necessary to fabricate the castings shown on this drawing.

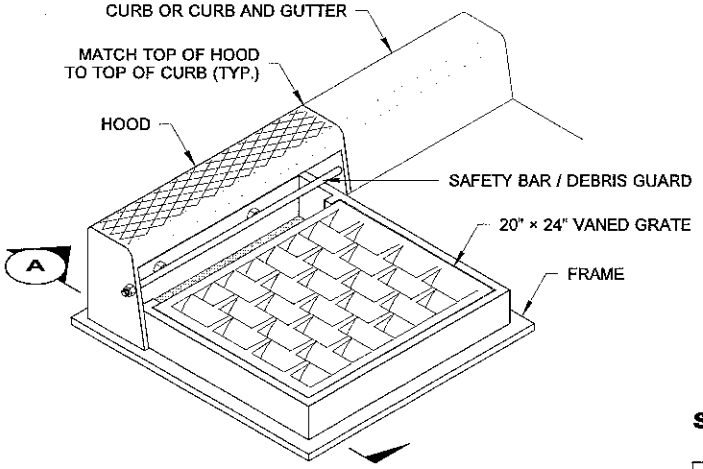


TOP VIEW

FRAME DETAIL



SECTION (A)



ISOMETRIC VIEW

COMBINATION INLET

FRAME, HOOD, AND VANED GRATE

MATTHEW J. WITECKI
STATE OF WASHINGTON
15588
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES JULY 1, 2007

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COMBINATION INLET

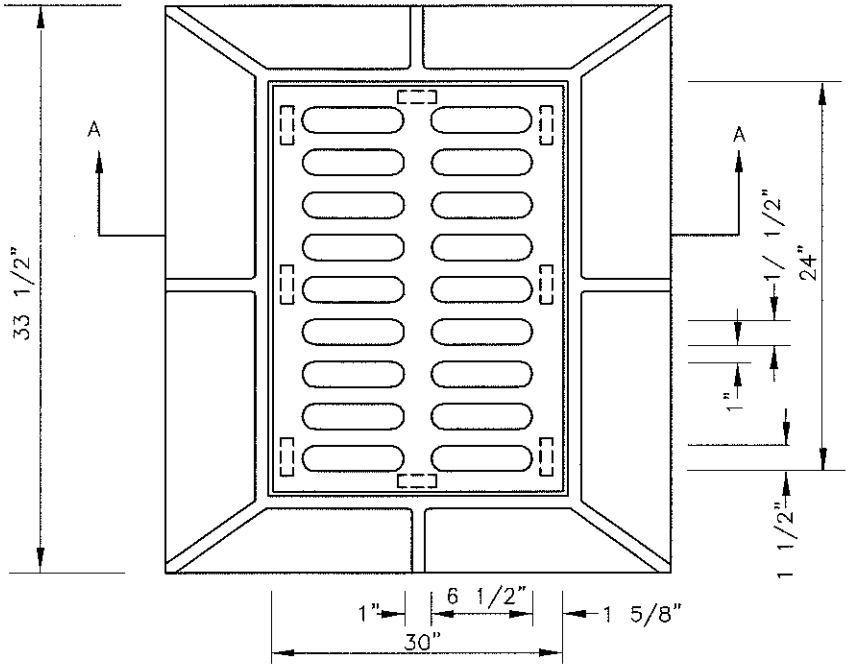
STANDARD PLAN B-25.20-00

SHEET 1 OF 1 SHEET

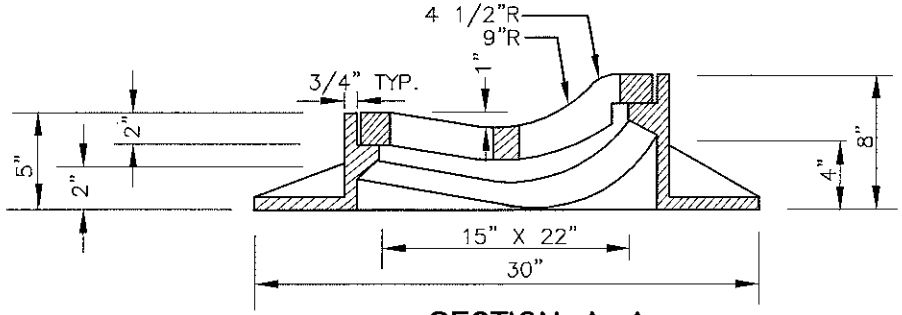
APPROVED FOR PUBLICATION

Harold J. Peterfeso — STATE DESIGN ENGINEER — *06-08-06* — DATE

Washington State Department of Transportation



PLAN



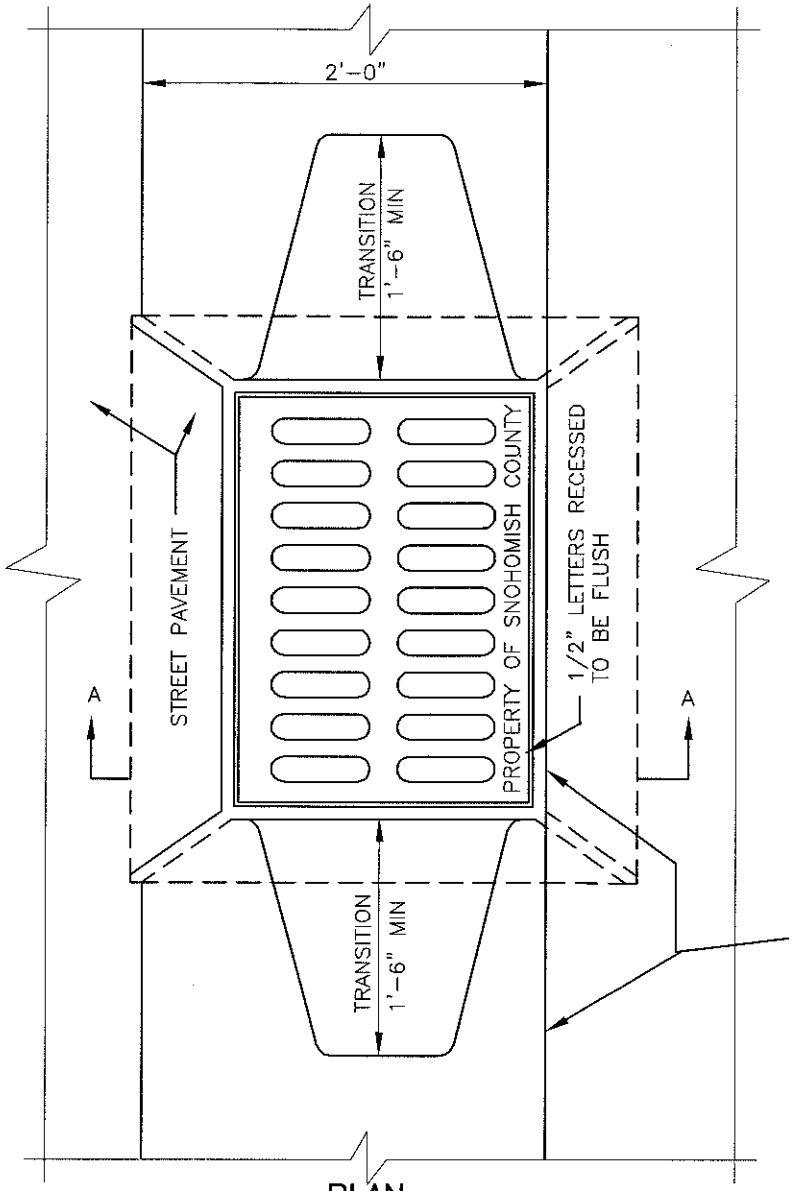
SECTION A–A

NOTES:

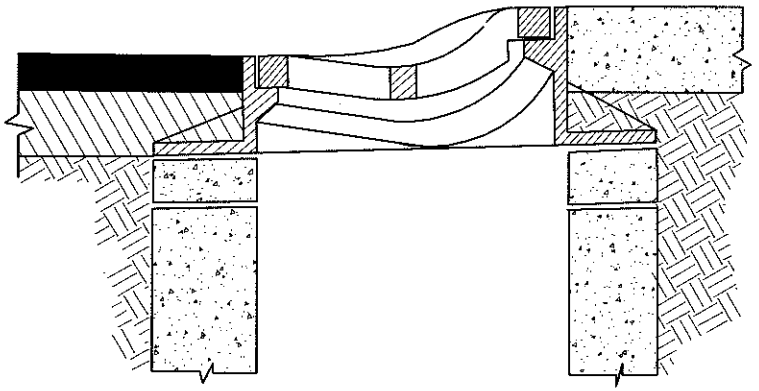
1. FOR REPLACEMENT OF EXISTING STRUCTURES ONLY, NOT FOR NEW INSTALLATION
2. MATERIAL IS CAST IRON ASTM A48 CLASS 30.
3. THE WORDS "PROPERTY OF SNOHOMISH COUNTY" SHALL BE OMITTED IF ON A PRIVATE SYSTEM.
4. NOT TO BE USED ON THICKENED EDGE ROADWAYS.

SEE TEXT SECTION 5–08

	SNOHOMISH COUNTY PUBLIC WORKS	APPROVED BY:
5–220A	ROLLED CURB FRAME & GRATE	COUNTY ROAD ENGINEER — DATE 9/23/10



PLAN



SECTION A–A

NOTES:

1. FOR REPLACEMENT OF EXISTING STRUCTURES ONLY, NOT FOR NEW INSTALLATION.
2. SET FRAME TO GRADE AND CONSTRUCT ROAD AND CURB TO BE FLUSH AT FRONT AND BACK OF FRAME.
3. SEE SECTION 5-08.
4. THE WORDS "PROPERTY OF SNOHOMISH COUNTY" SHALL BE OMITTED IF GRATE IS ON PRIVATE SYSTEM.
5. NOT TO BE USED ON THICKENED EDGE ROADWAYS.

SNOHOMISH COUNTY PUBLIC WORKS

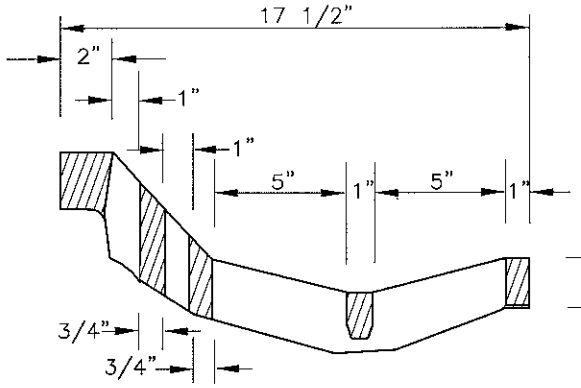
5-220B | ROLLED CURB FRAME & GRATE INSTALLATION

APPROVED BY:

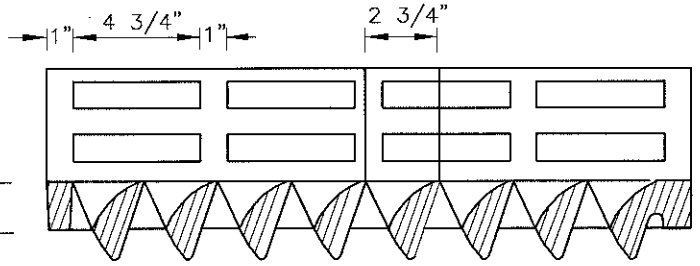
COUNTY ROAD ENGINEER

9/23/10

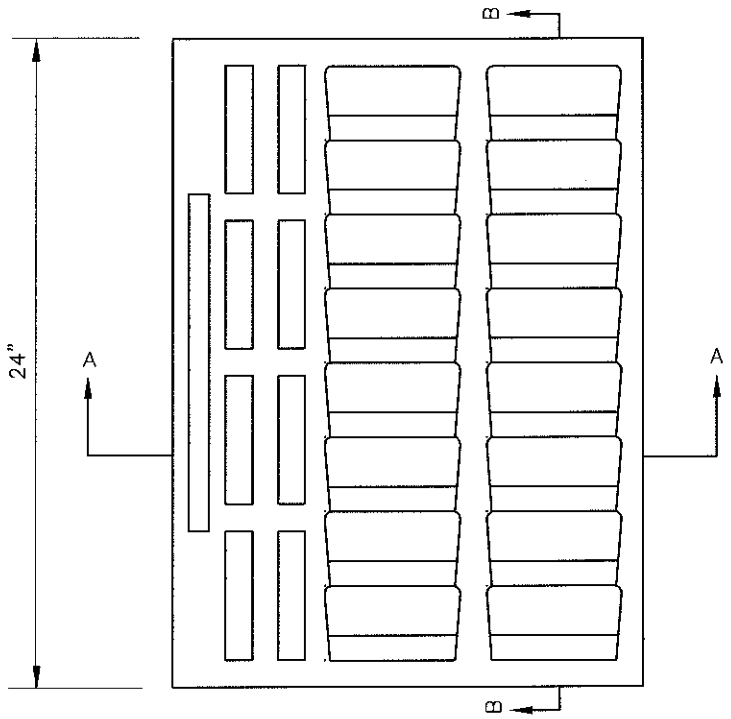
DATE



SECTION A–A



SECTION B–B

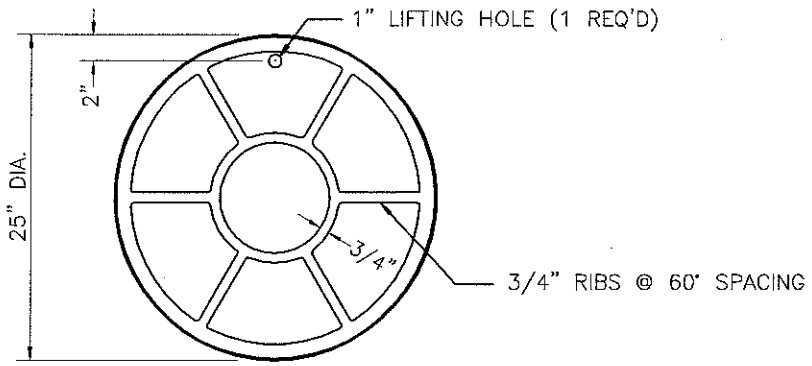


NOTES:

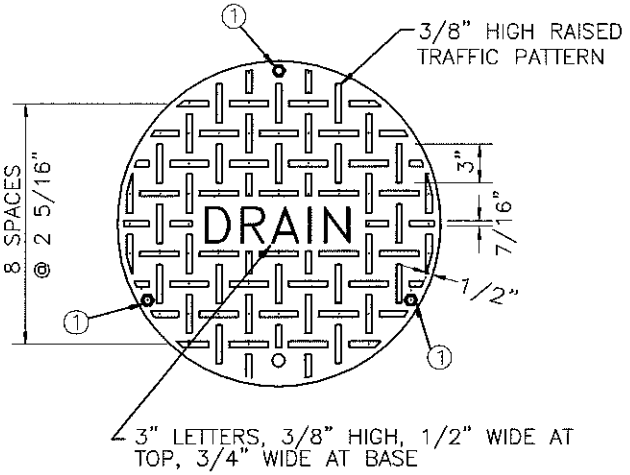
1. FOR REPLACEMENT OF EXISTING STRUCTURES ONLY, NOT FOR NEW INSTALLATION.
2. MATERIAL IS CAST IRON ASTM A48 CLASS 30.
3. THE WORDS "PROPERTY OF SNOHOMISH COUNTY" SHALL BE OMITTED IF ON A PRIVATE SYSTEM.

SEE TEXT SECTION 5–08.

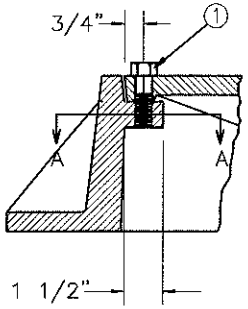
	SNOHOMISH COUNTY PUBLIC WORKS	APPROVED BY:
5–225	ROLLED CURB VANED GRATE	COUNTY ROAD ENGINEER — DATE 9/23/10



BOTTOM OF COVER

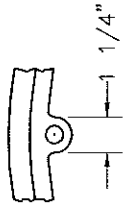


TOP OF COVER

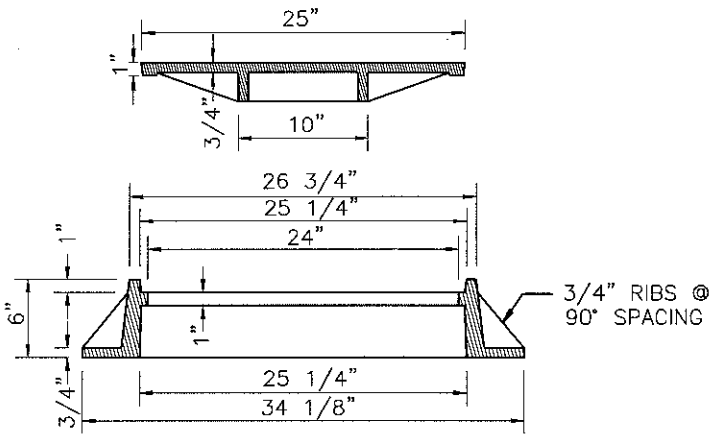


BOLT–DOWN DETAIL

(RAISED TRAFFIC PATTERN NOT SHOWN)



SECTION A–A



FRAME AND COVER ELEVATION

(RAISED TRAFFIC PATTERN NOT SHOWN)

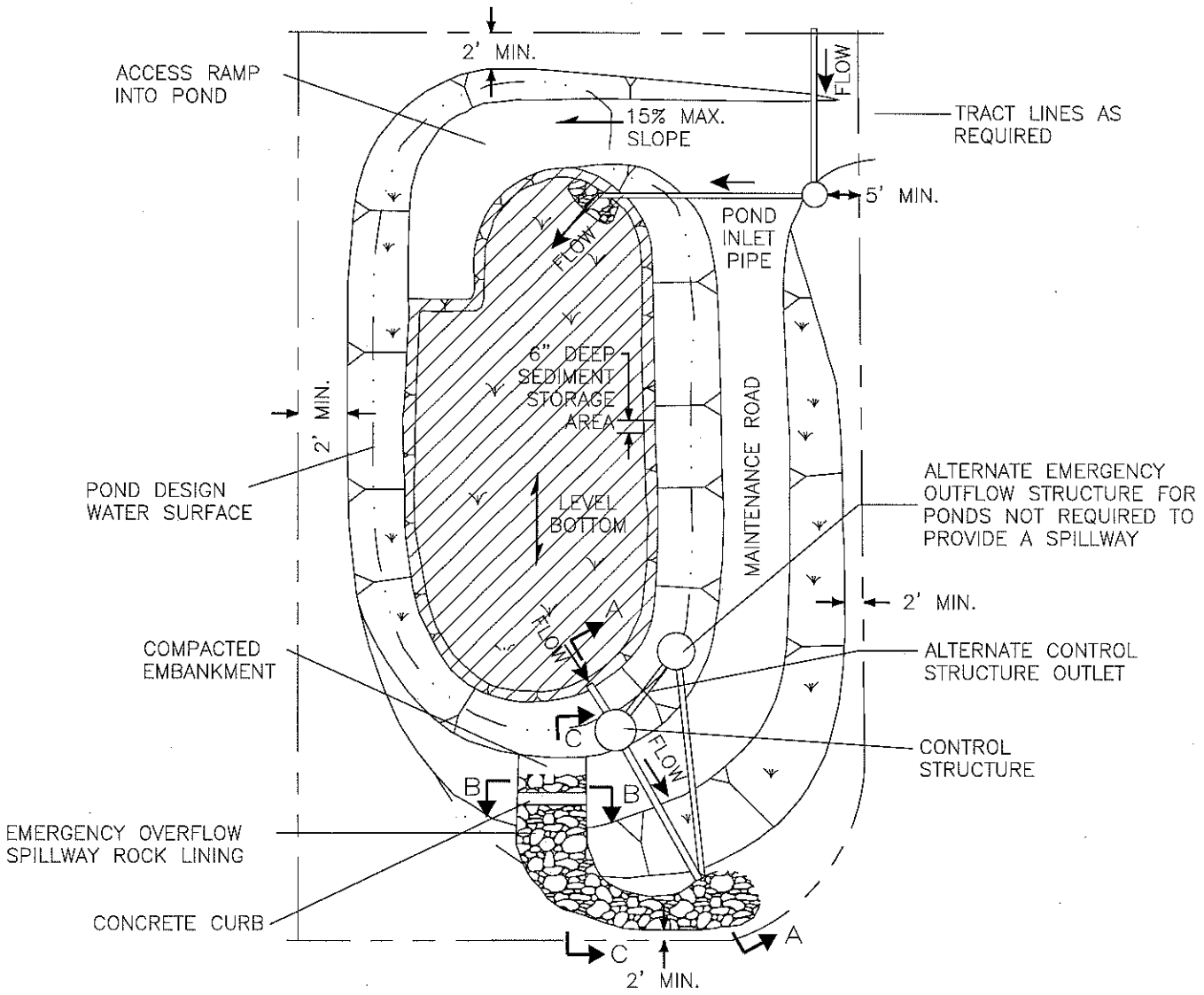
NOTES:

1. COVER SHALL BE LOCKED DOWN WITH (3) 5/8" STAINLESS STEEL SOCKET HEAD CAP SCREWS. DRILL (3) 11/16" HOLES IN COVER SPACED AT 120 DEGREES AND 3/4" IN FROM EDGE OF COVER.

2. MATERIAL IS DUCTILE IRON ASTM A 536 GRADE 80–55–06.

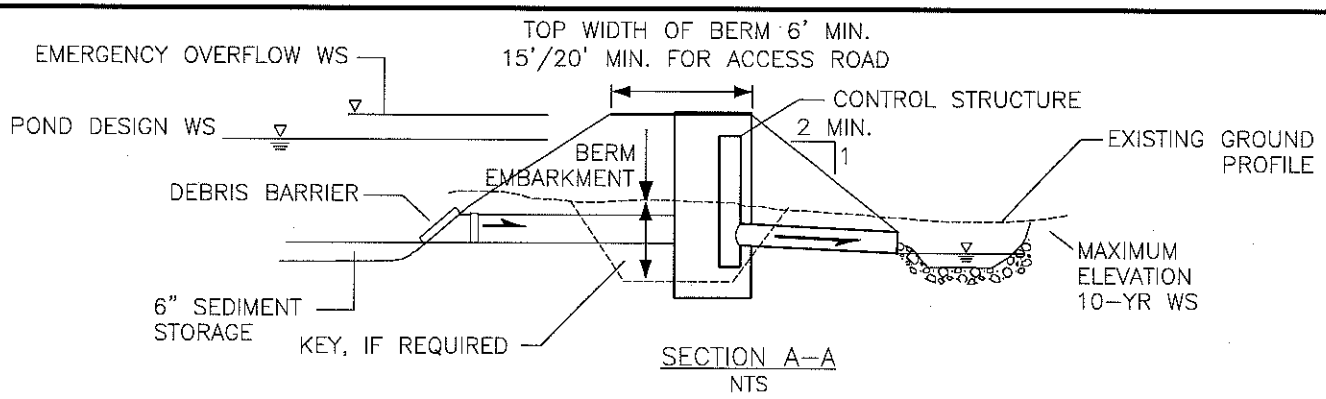
SEE TEXT SECTION 5–08.

	SNOHOMISH COUNTY PUBLIC WORKS	APPROVED BY: 9/23/10
	5–230 MANHOLE RING AND COVER	COUNTY ROAD ENGINEER DATE

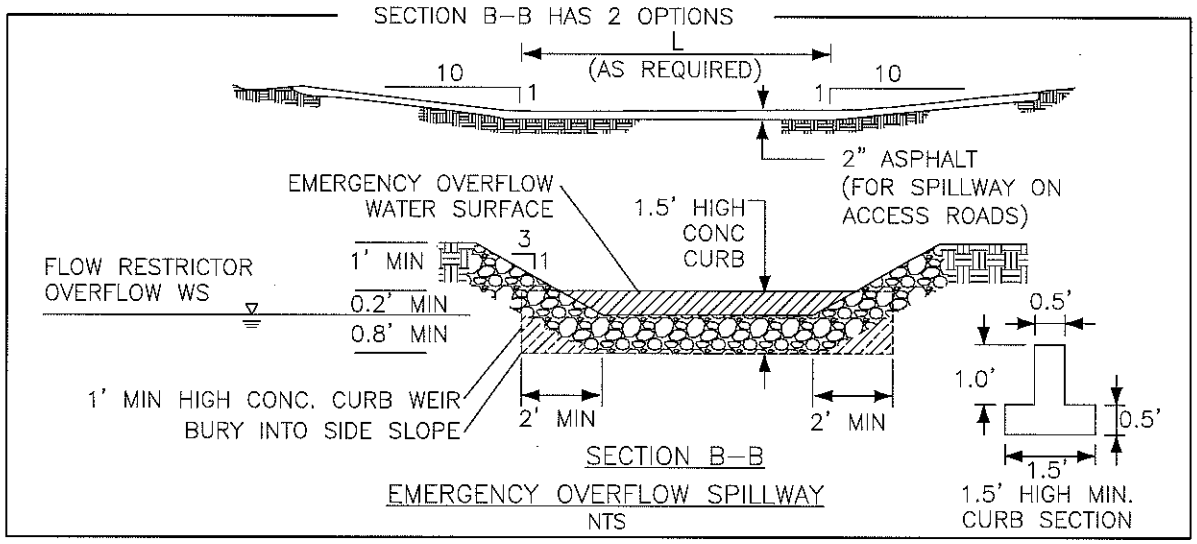


NOTE:
THIS DETAIL IS A SCHEMATIC REPRESENTATION ONLY. ACTUAL CONFIGURATION WILL VARY DEPENDING ON SPECIFIC SITE CONSTRAINTS AND APPLICABLE DESIGN CRITERIA.

	SNOHOMISH COUNTY PUBLIC WORKS	APPROVED BY:
5-240A	TYPICAL DETENTION POND	COUNTY ROAD ENGINEER — DATE: 9/23/00

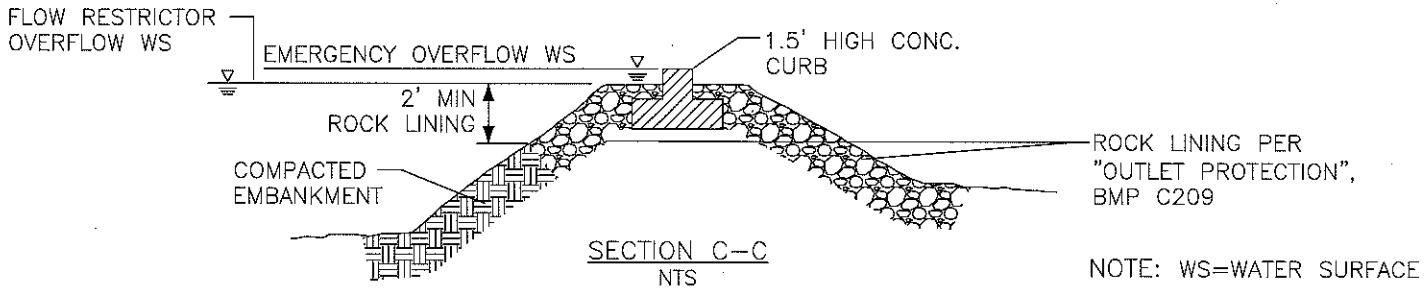


SECTION A–A
NTS



SECTION B–B
EMERGENCY OVERFLOW SPILLWAY
NTS

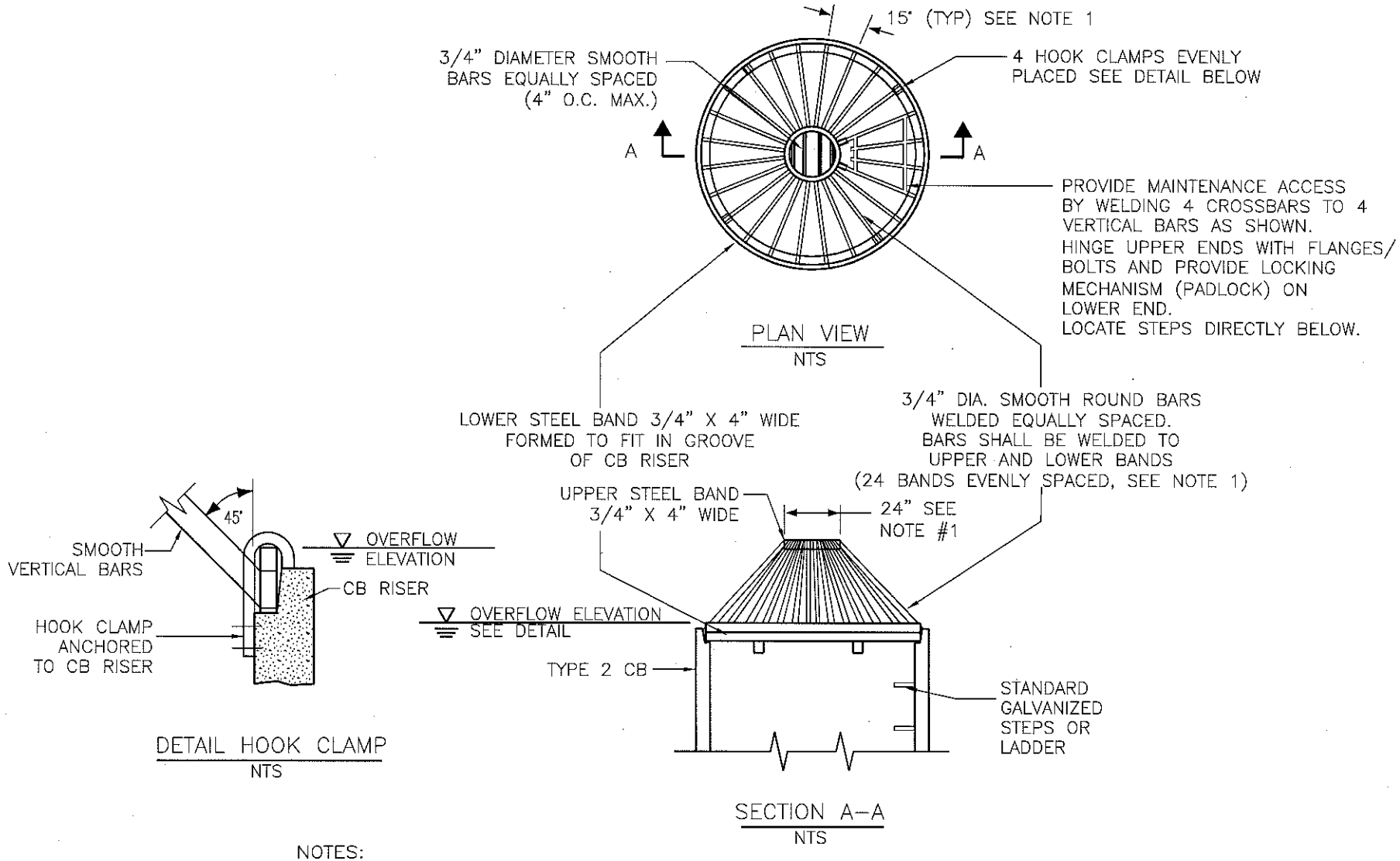
1.5' HIGH MIN. CURB SECTION



SECTION C–C
NTS

NOTE: WS=WATER SURFACE

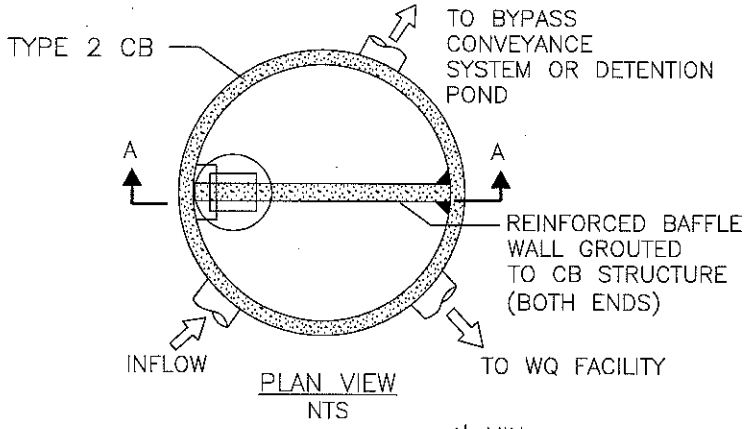
	SNOHOMISH COUNTY PUBLIC WORKS	APPROVED BY:
5–240B	TYPICAL DETENTION POND SECTIONS	COUNTY ROAD ENGINEER — DATE 9/23/10



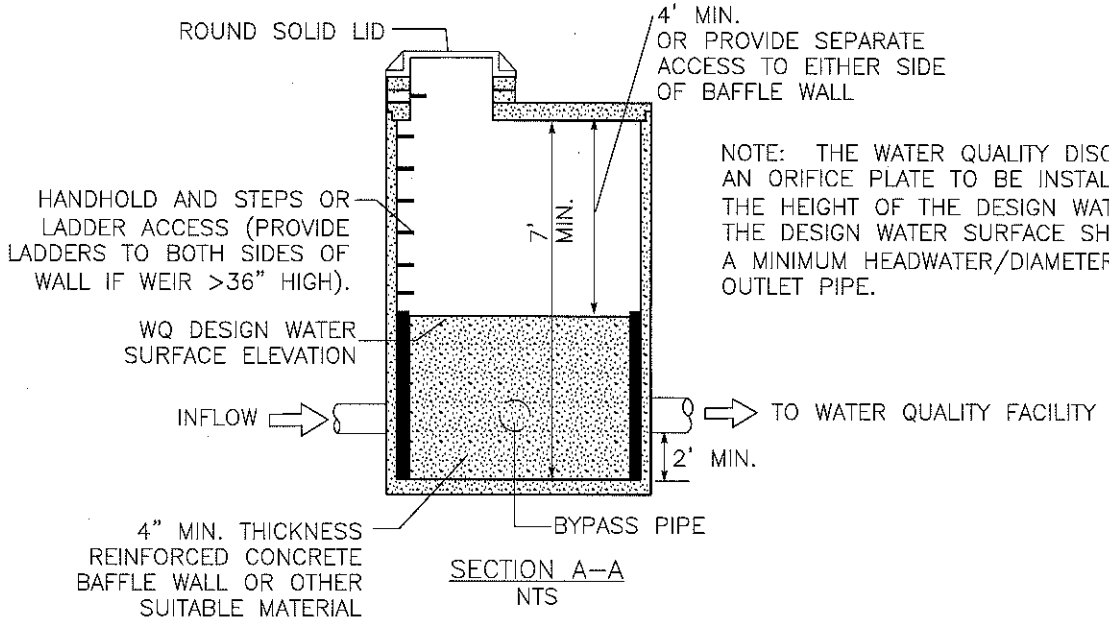
NOTES:

1. DIMENSIONS ARE FOR ILLUSTRATION ON 54" DIAMETER CB. FOR DIFFERENT DIAMETER CB'S ADJUST TO MAINTAIN 45° ANGLE ON "VERTICAL" BARS AND 7" O.C. MAXIMUM SPACING OF BARS AROUND LOWER STEEL BAND.
2. METAL PARTS MUST BE CORROSION RESISTANT; STEEL BARS MUST BE GALVANIZED.

	SNOHOMISH COUNTY PUBLIC WORKS	APPROVED BY:
5–245	OVERFLOW STRUCTURE	COUNTY ROAD ENGINEER — DATE 9/23/10



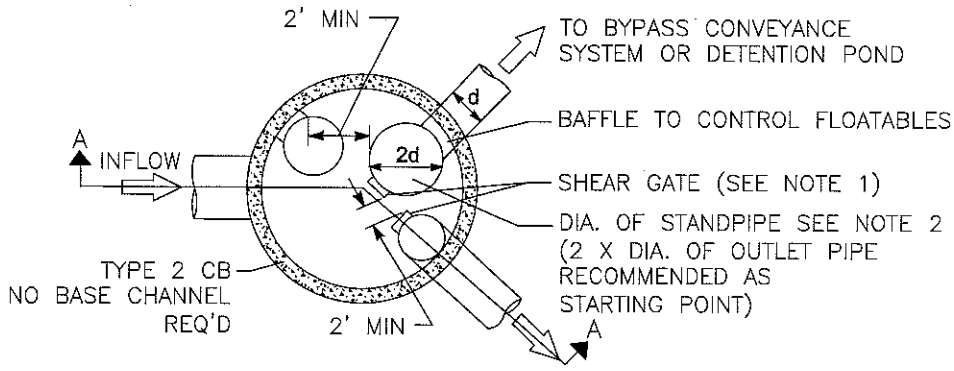
PLAN VIEW
NTS



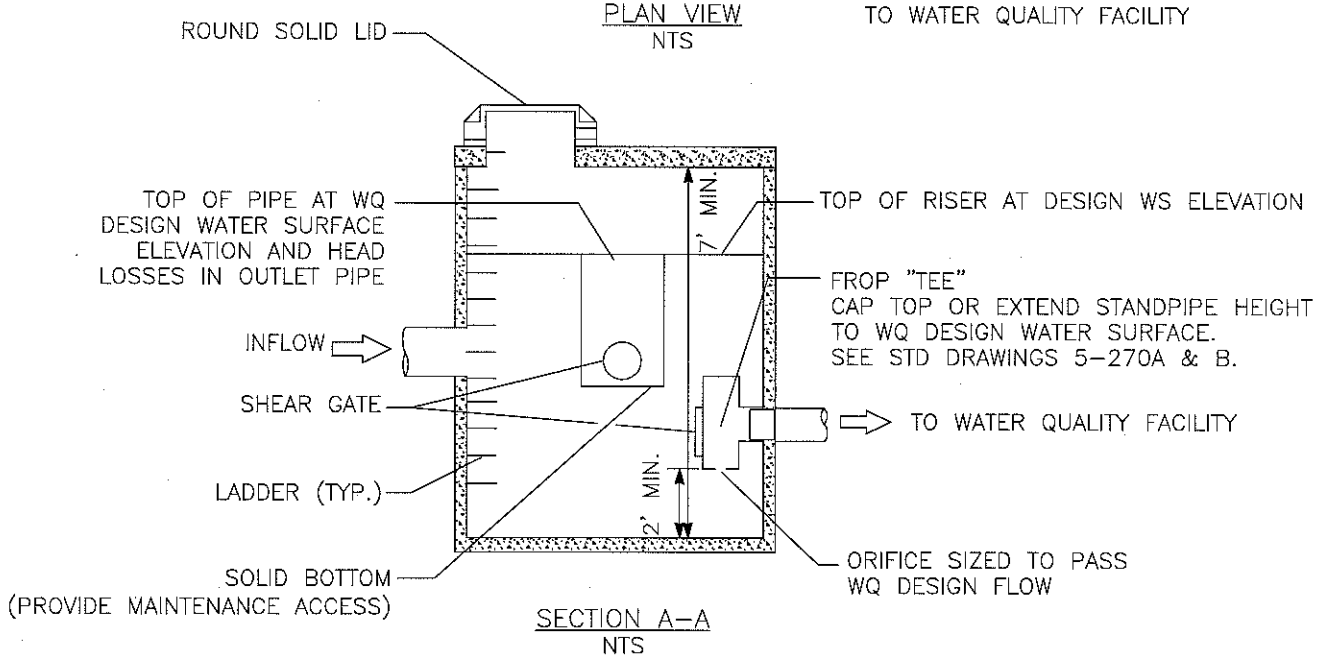
SECTION A–A
NTS

NOTE: THE WATER QUALITY DISCHARGE PIPE MAY REQUIRE AN ORIFICE PLATE TO BE INSTALLED ON THE OUTLET TO CONTROL THE HEIGHT OF THE DESIGN WATER SURFACE (WEIR HEIGHT). THE DESIGN WATER SURFACE SHOULD BE SET TO PROVIDE A MINIMUM HEADWATER/DIAMETER RATIO OF 2.0 ON THE OUTLET PIPE.

SNOHOMISH COUNTY PUBLIC WORKS		APPROVED BY:
5–250A	FLOW SPLITTER, OPTION A	COUNTY ROAD ENGINEER — DATE 9/23/10



PLAN VIEW
NTS

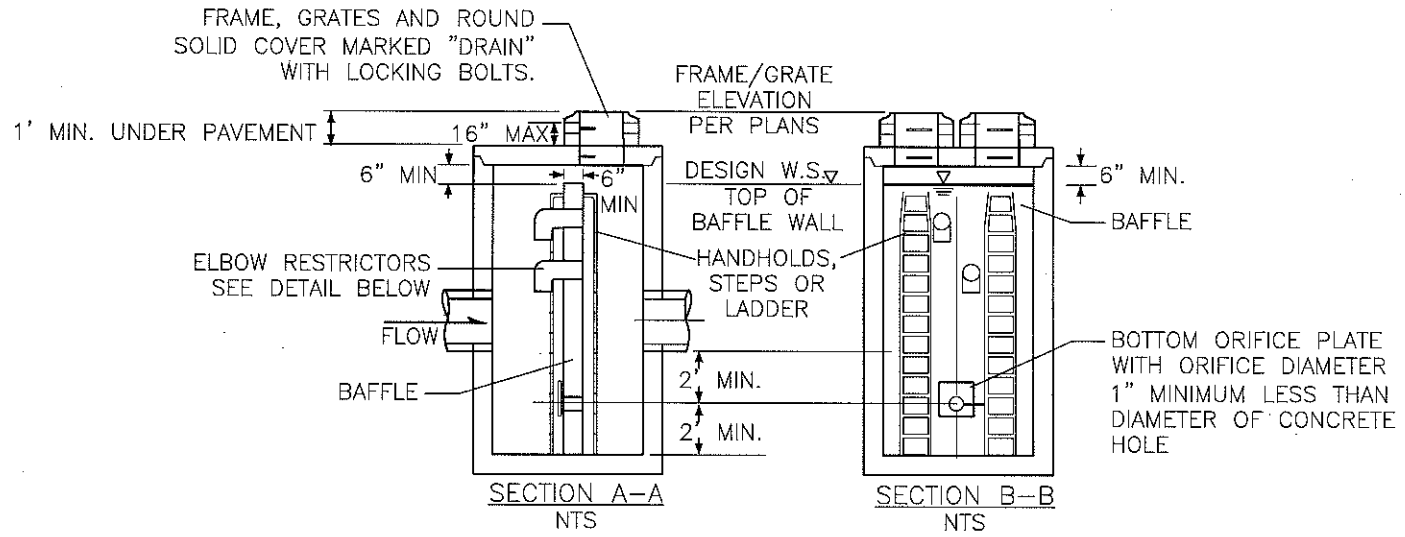


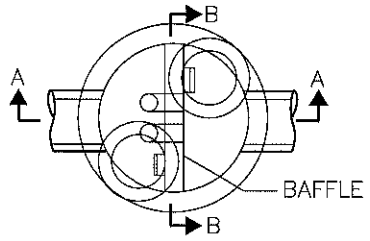
SECTION A-A
NTS

NOTE 1: SHEAR GATES TO BE INSTALLED WITH ALUMINUM TUBE LIFT ROD AND HANDLE. LIFT ROD MUST REACH AND REST ON TOP LADDER RUNG.

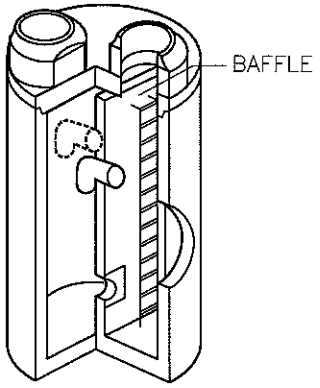
NOTE 2: DIAMETER (D) OF STANDPIPE SHOULD BE LARGE ENOUGH TO MINIMIZE HEAD ABOVE WQ DESIGN WS AND TO KEEP WQ DESIGN FLOWS FROM INCREASING MORE THAN 10% DURING 100-YEAR FLOWS.

SNOHOMISH COUNTY PUBLIC WORKS		APPROVED BY: 9/23/10
5-250B	FLOW SPLITTER, OPTION B	COUNTY ROAD ENGINEER — DATE





PLAN VIEW
NTS



ISOMETRIC
NTS

NOTES:

1. SEE CONSTRUCTION PLANS OR CONTRACT FOR SIZE AND LOCATION OF ALL PIPES AND ORIFICES.

2. BAFFLE WALL SHALL HAVE #4 BAR AT 12" SPACING EACH WAY.

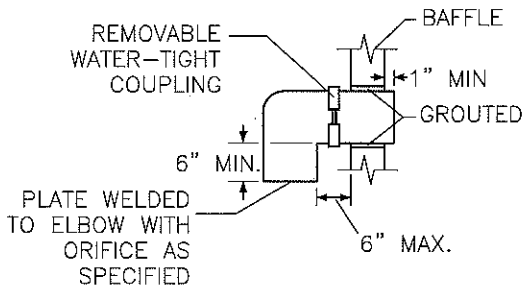
3. PRECAST BAFFLE SHALL BE KEYED AND GROUTED IN PLACE.

4. BOTTOM ORIFICE PLATE SHALL BE GALVANIZED STEEL WITH A MINIMUM THICKNESS OF 1/4". ATTACH ORIFICE WITH 1/2" STAINLESS STEEL BOLTS.

5. UPPER FLOW ORIFICE PLATES AND ELBOWS SHALL BE ALUMINUM, ALUMINIZED STEEL OR GALVANIZED STEEL. GALVANIZED STEEL SHALL HAVE TREATMENT 1.

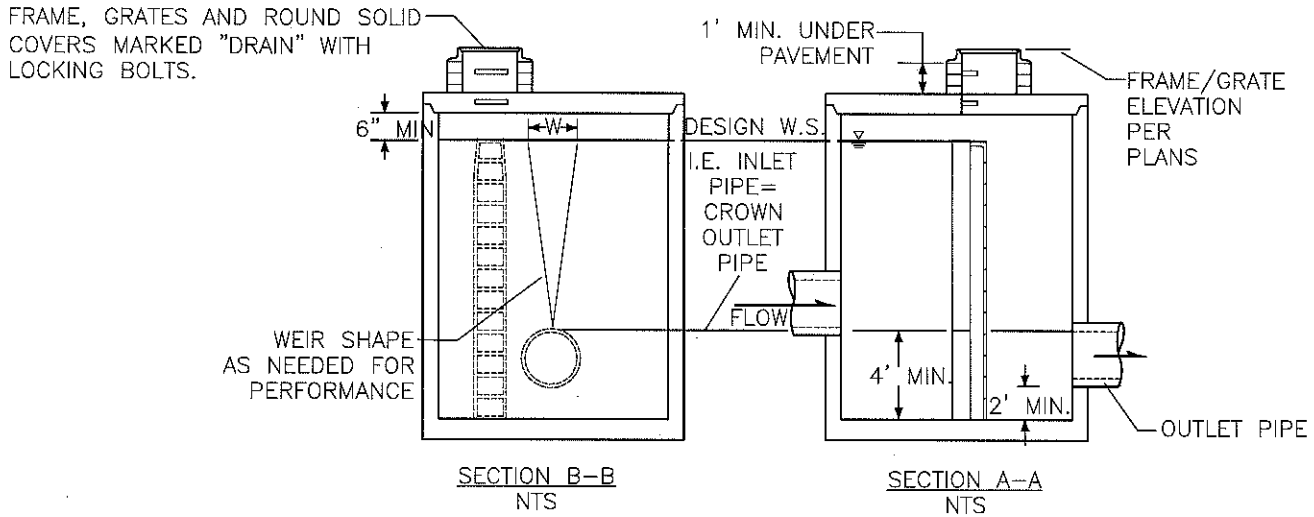
6. CATCHBASIN: TYPE 2 MINIMUM 72" DIAMETER

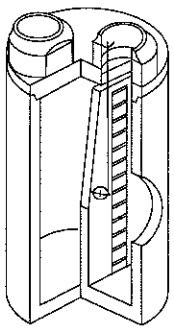
7. ORIFICES: SIZED AND LOCATED AS REQUIRED WITH LOWEST ORIFICE A MINIMUM OF 2' FROM BASE



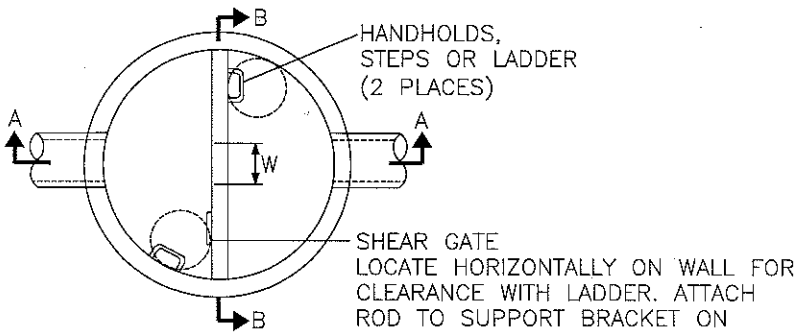
ELBOW RESTRICTOR DETAIL
NTS

	SNOHOMISH COUNTY PUBLIC WORKS	APPROVED BY: 9/23/10
5-260	FLOW RESTRICTOR (BAFFLE)	COUNTY ROAD ENGINEER / DATE





ISOMETRIC
NTS



PLAN VIEW
NTS

NOTES:
METAL PARTS: CORROSION RESISTANT STEEL PARTS GALVANIZED AND ASPHALT COATED.
CATCHBASIN: TYPE 2 MIN. 72" DIAMETER .
BAFFLE WALL: TO BE DESIGNED WITH CONCRETE REINFORCING AS REQUIRED.
SPILL CONTAINMENT MUST BE PROVIDED TO TEMPORARILY DETAIN OIL OR FLOATABLE POLLUTANTS IN RUNOFF DUE TO ACCIDENTAL SPILL OR ILLEGAL DUMPING.

	SNOHOMISH COUNTY PUBLIC WORKS	APPROVED BY: 9/23/10
	5–265 FLOW RESTRICTOR (WEIR)	COUNTY ROAD ENGINEER DATE

NOTES:

1. THE PIPE SUPPORTS AND THE FLOW RESTRICTOR SHALL BE CONSTRUCTED OF THE SAME MATERIAL AND BE ANCHORED AT A MAXIMUM SPACING OF 36". ATTACH THE PIPE SUPPORTS TO THE MANHOLE WITH 5/8" STAINLESS STEEL EXPANSION BOLTS OR EMBED THE SUPPORTS INTO THE MANHOLE WALL 2". ACCESS PORTS SHALL BE PROVIDED OVER THE LADDER AND OVER THE CONTROL STRUCTURE.

2. FOR DETAILS SHOWING GRADE RING, LADDER, STEPS, HANDHOLDS AND TOP SLABS, SEE STD DWG 5-120, CATCHBASIN DETAILS.

3. THE FLOW RESTRICTOR SHALL BE FABRICATED FROM ONE OF THE FOLLOWING MATERIALS:
   0.060" CORRUGATED ALUMINUM ALLOY DRAIN PIPE
   0.064" CORRUGATED GALVANIZED STEEL DRAIN PIPE WITH TREATMENT 1
   0.064" CORRUGATED ALUMINIZED STEEL DRAIN PIPE
   0.060" ALUMINUM ALLOY FLAT SHEET, IN ACCORDANCE WITH ASTM B 209, 5052 H32 OR EPS
   HIGH DENSITY POLYETHYLENE STORM SEWER PIPE

4. OUTLET SHALL BE CONNECTED TO CULVERT OR SEWER PIPE WITH A STANDARD COUPLING BAND FOR CORRUGATED METAL PIPE OR GROUTED INTO THE BELL OF CONCRETE PIPE.

5. THE VERTICAL RISER STEM OF THE RESTRICTOR/SEPARATOR SHALL BE THE SAME DIAMETER AS THE HORIZONTAL OUTLET PIPE WITH A 8" MINIMUM SIZE.

6. FRAME AND LADDER OR STEPS TO BE OFFSET SO THAT (1) CLEANOUT GATE IS VISIBLE FROM TOP. (2) CLIMB-DOWN SPACE IS CLEAR OF RISER AND CLEANOUT GATE. (3) FRAME IS CLEAR OF CURB (IF ANY EXIST).

7. MULTI-ORIFICE ELBOWS MAY BE LOCATED AS SHOWN ON ONE SIDE OF RISER TO ASSURE LADDER CLEARANCE. SIZE OF ELBOWS TO BE DETERMINED BY THE ENGINEER.

8. RESTRICTOR PLATE WITH ORIFICE AS SPECIFIED IN THE PLANS. OMIT PLATE IF ONLY FOR POLLUTION CONTROL. SPECIFIED OPENING TO BE CUT ROUND AND SMOOTH.

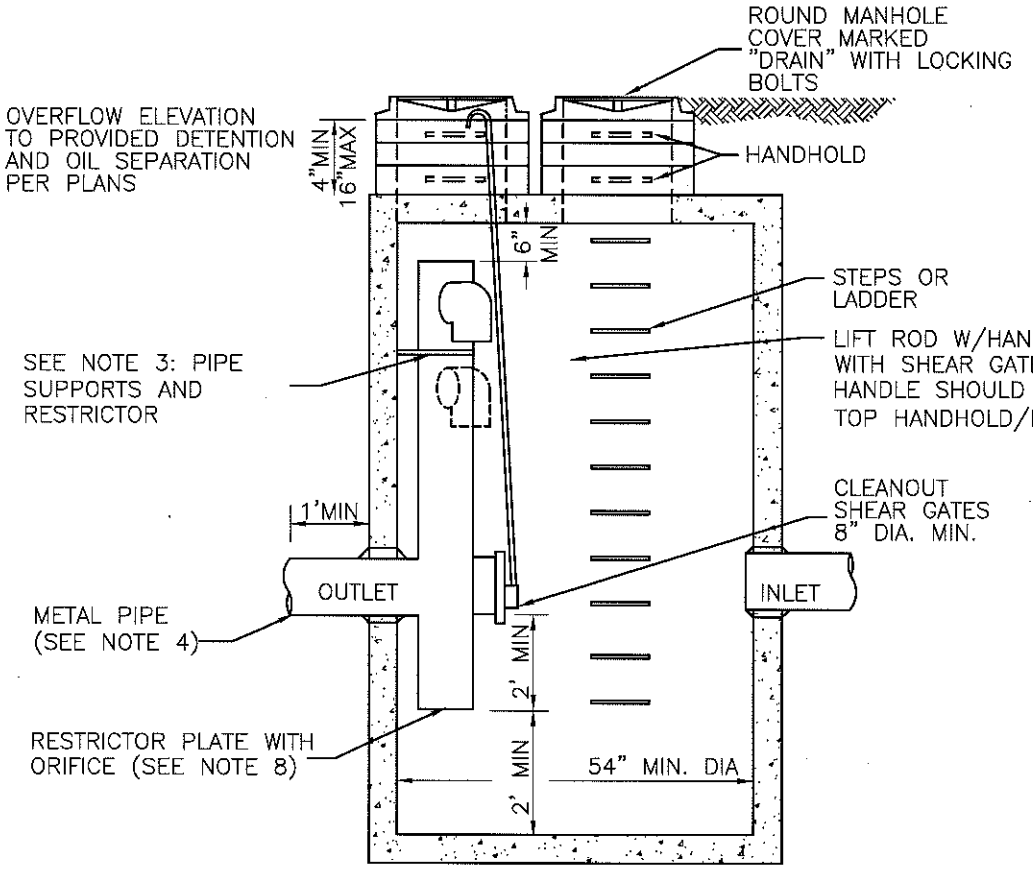
9. CLEANOUT GATE/SHEAR GATE :
ALUMINUM ALLOY PER ASTM B26-ZG32A OR CAST IRON ASTM A48 CLASS 30B AS REQUIRED.
LIFT HANDLE EITHER SOLID OR TUBING WITH ADJUSTABLE HOOK AS REQUIRED.
NEOPRENE RUBBER GASKETS REQUIRED BETWEEN FLANGES.

10. ALTERNATE CLEANOUT GATES/SHEAR GATES TO THE DESIGN SHOWN ON STD DWG 5-275 ARE ACCEPTABLE PROVIDED THEY MEET THE MATERIAL SPECIFICATIONS ABOVE AND HAVE A SIX BOLT, 10 3/8" BOLT CIRCLE FOR BOLTING TO THE FLANGE CONNECTION. 5/8" DIAMETER STAINLESS STEEL EXPANSION BOLTS SHALL BE USED.

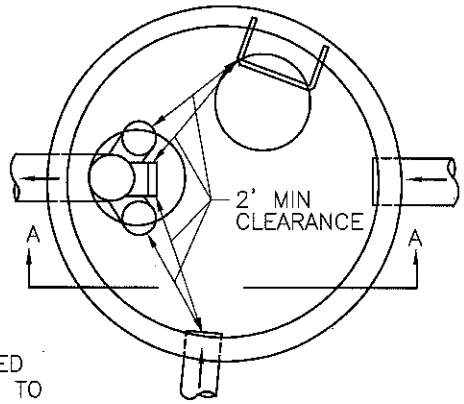
11. RESTRICTOR TEES MAY BE FABRICATED (EXTRUSION WELDED) FROM DOUBLE WALLED (SMOOTH INTERIOR) CORRUGATED POLYETHYLENE PIPE MEETING THE REQUIREMENTS OF SECTION 5-05.I OF THESE STANDARDS. PIPE SUPPORTS FOR RESTRICTOR SHALL BE FABRICATED FROM THOSE MATERIALS LISTED IN NOTE 3 ABOVE. THE OUTLET SHALL BE CONNECTED TO CULVERT OR SEWER PIPE WITH A PREMIUM COUPLING, BY USING A HEAT SHRINK ADAPTER TO OTHER TYPES OF PIPE, OR BY FABRICATING A SMOOTH OR TAPERED OUTLET TO SLIP INSIDE OF THE CULVERT OR SEWER PIPE.

SEE TEXT SECTION 5-10.F

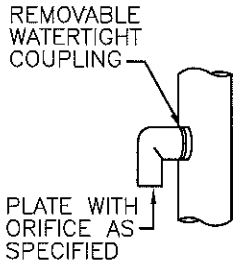
	SNOHOMISH COUNTY PUBLIC WORKS	APPROVED BY: 9/13/10
5-270A	FLOW RESTRICTOR/ OIL POLLUTION CONTROL -T RESTRICTOR NOTES	COUNTY ROAD ENGINEER DATE



SECTION A–A

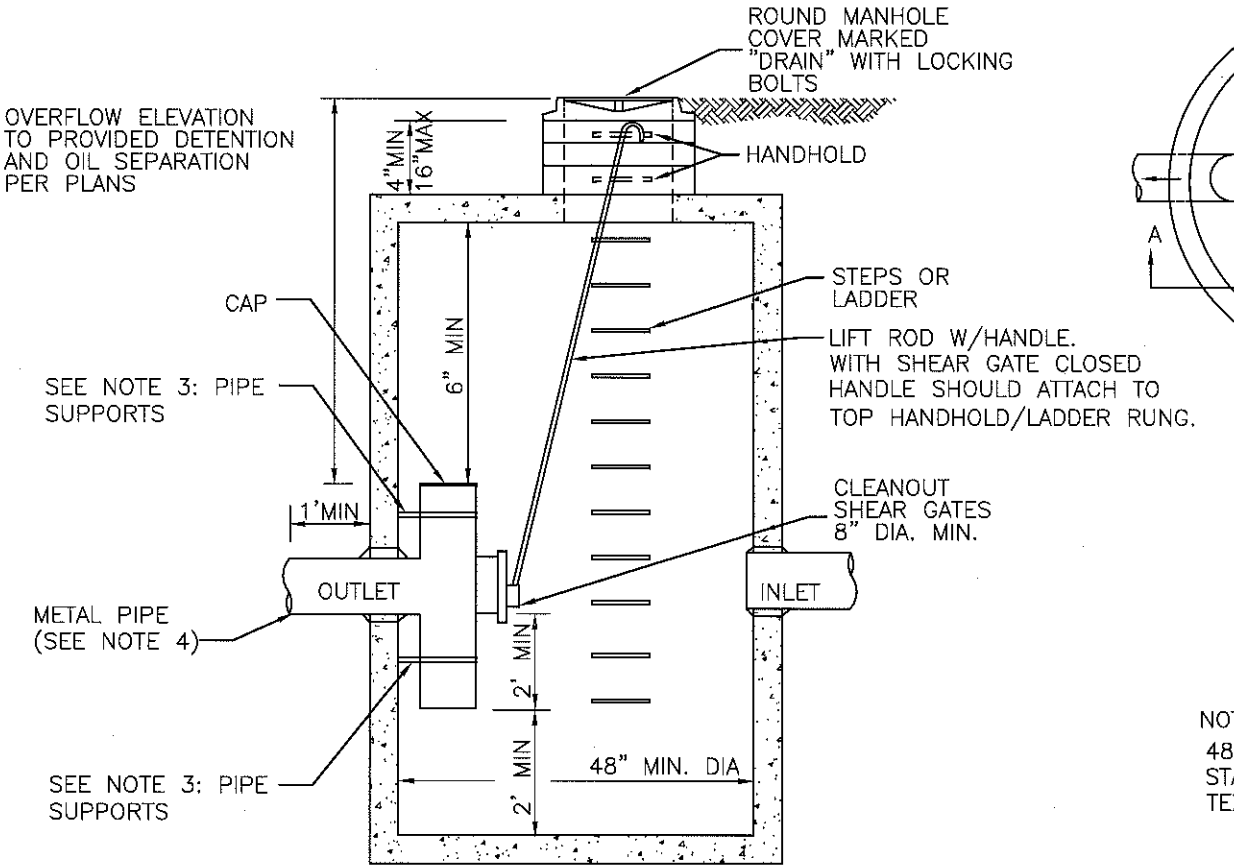


PLAN VIEW

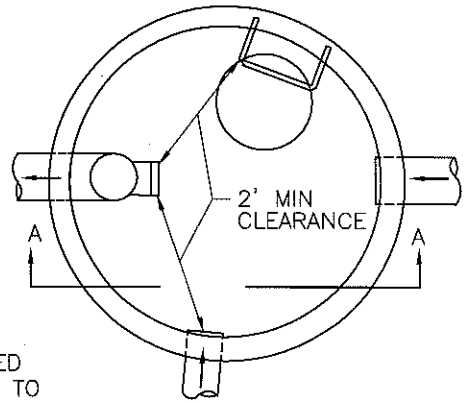


ELBOW DETAIL

SNOHOMISH COUNTY PUBLIC WORKS		APPROVED BY:
5–270B	FLOW RESTRICTOR/ OIL POLLUTION CONTROL –T RESTRICTOR	COUNTY ROAD ENGINEER — DATE 9/23/10



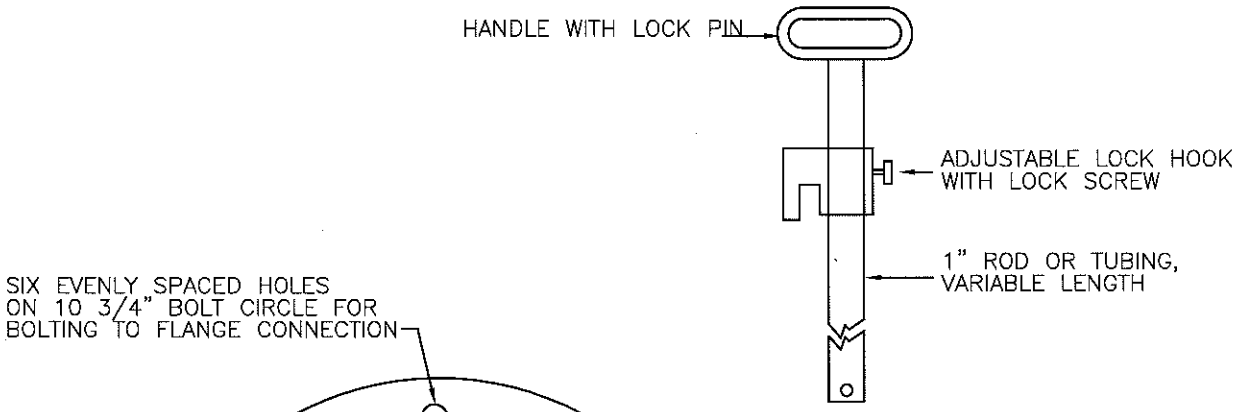
TYPE 2 CATCHBASIN
SECTION A–A



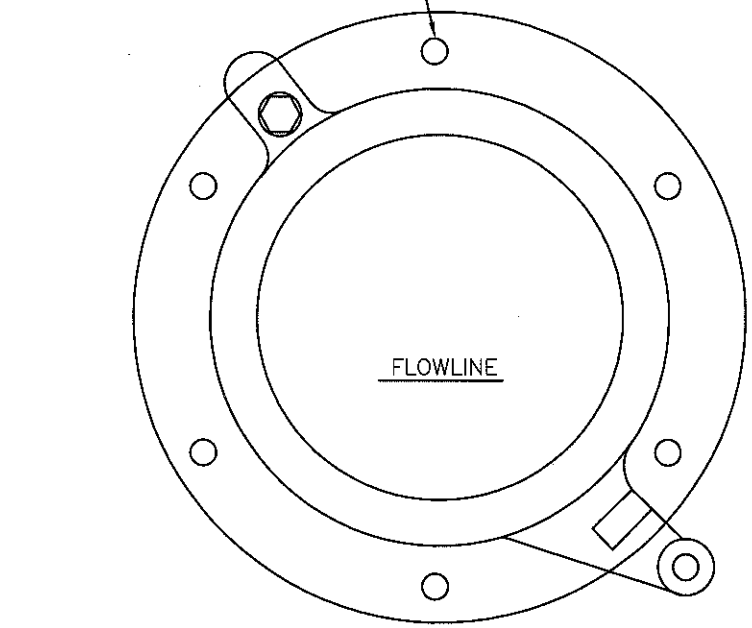
PLAN VIEW

NOTE:
48" MINIMUM DIAMETER ALLOWED IF STANDPIPE TOP IS CAPPED. SEE TEXT SECTION 5–07.

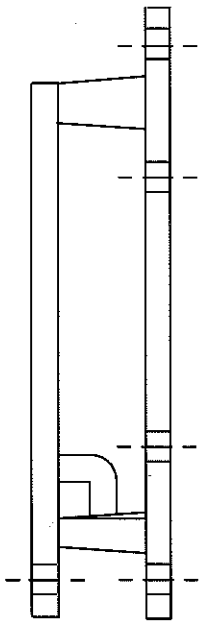
SNOHOMISH COUNTY PUBLIC WORKS		APPROVED BY:
5–270C	OIL POLLUTION CONTROL CATCHBASIN	COUNTY ROAD ENGINEER — DATE 9/23/10



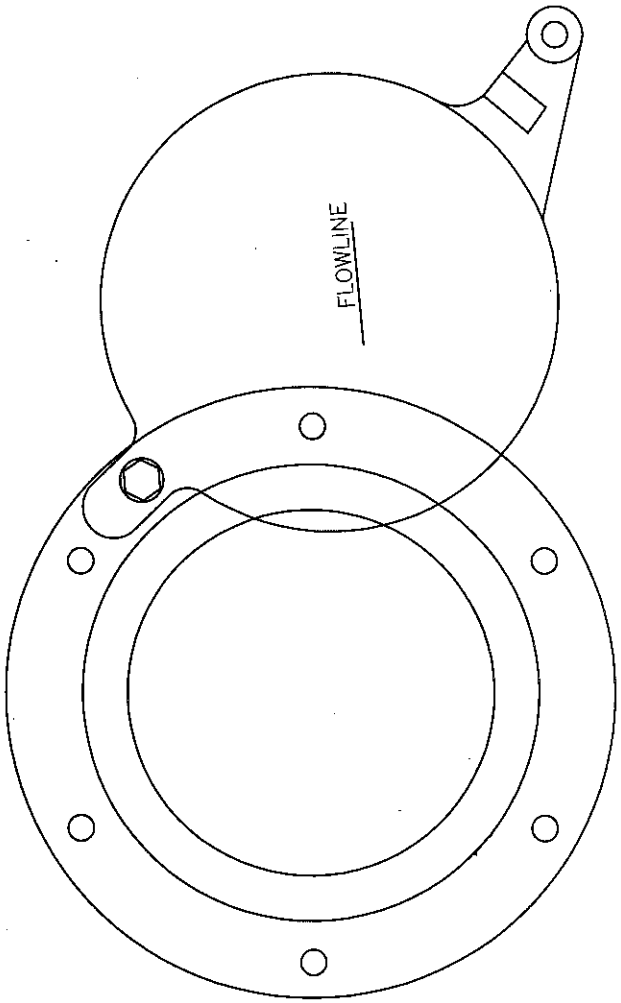
LIFT HANDLE



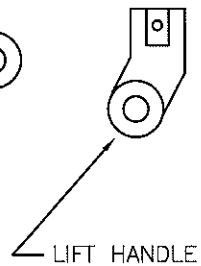
FRONT



SIDE



MAXIMUM OPENING OF GATE



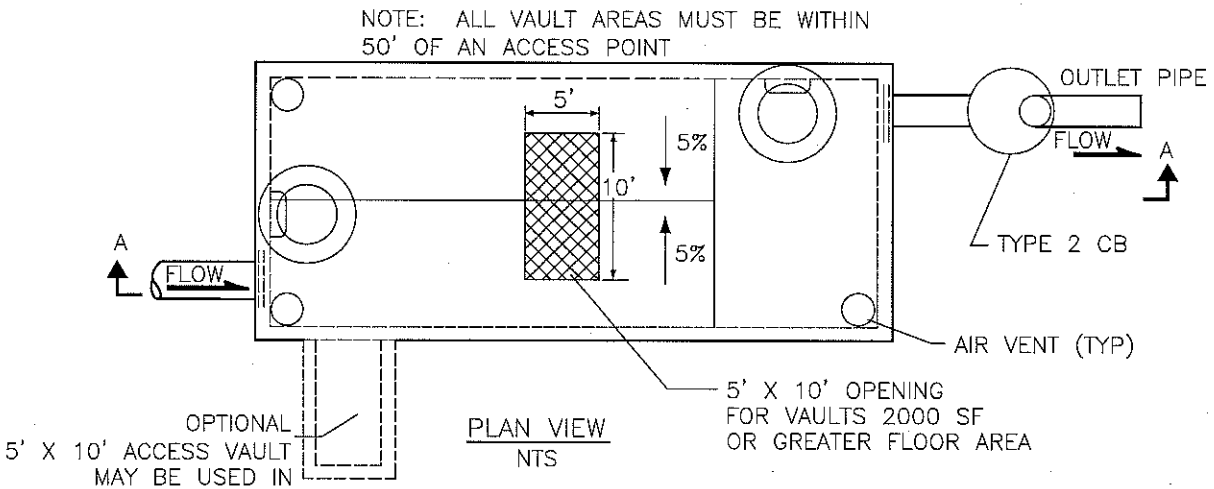
LIFT HANDLE SHALL BE ATTACHED PER MANUFACTURER'S RECOMMENDATIONS.

CLEANOUT/SHEAR GATE

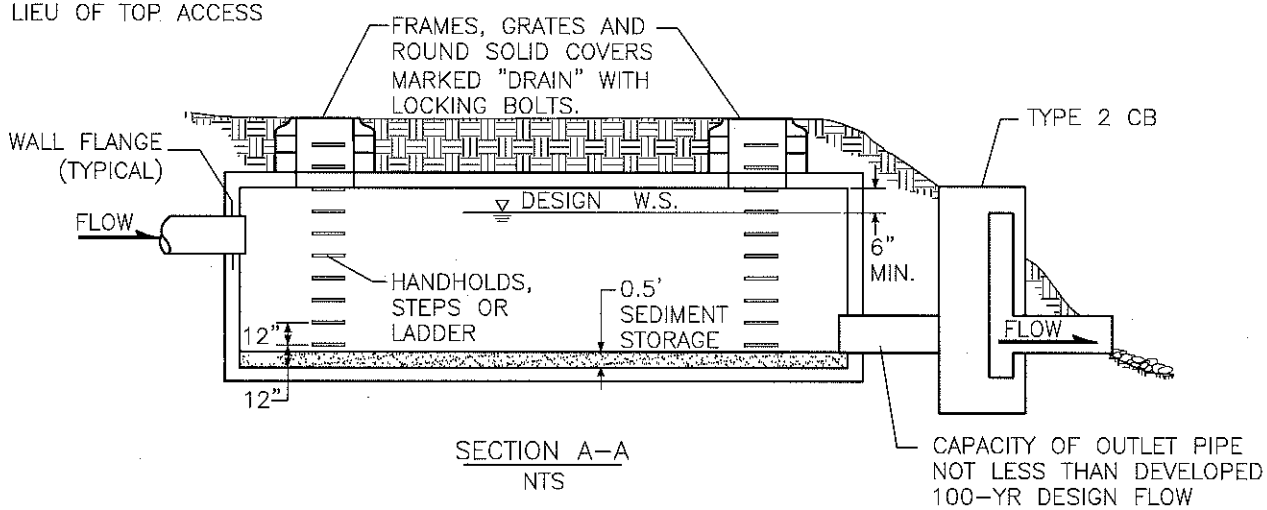
ALTERNATES ARE ACCEPTABLE PROVIDED MATERIAL SPECIFICATIONS ARE MET AND FLANGE BOLT PATTERN MATCHES.

SEE TEXT SECTION 5-10.

	SNOHOMISH COUNTY PUBLIC WORKS	APPROVED BY: 9/23/10
5-275	FLOW RESTRICTOR/ OIL POLLUTION CONTROL – T SHEAR GATE DETAIL	COUNTY ROAD ENGINEER DATE



PLAN VIEW
NTS

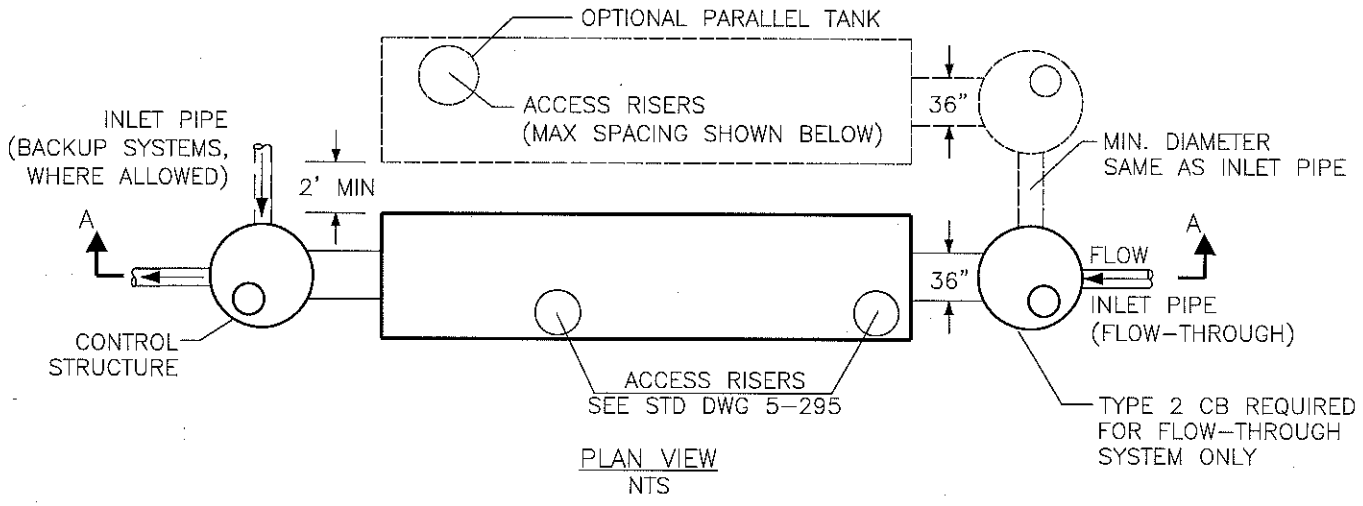


SECTION A–A
NTS

NOTES:

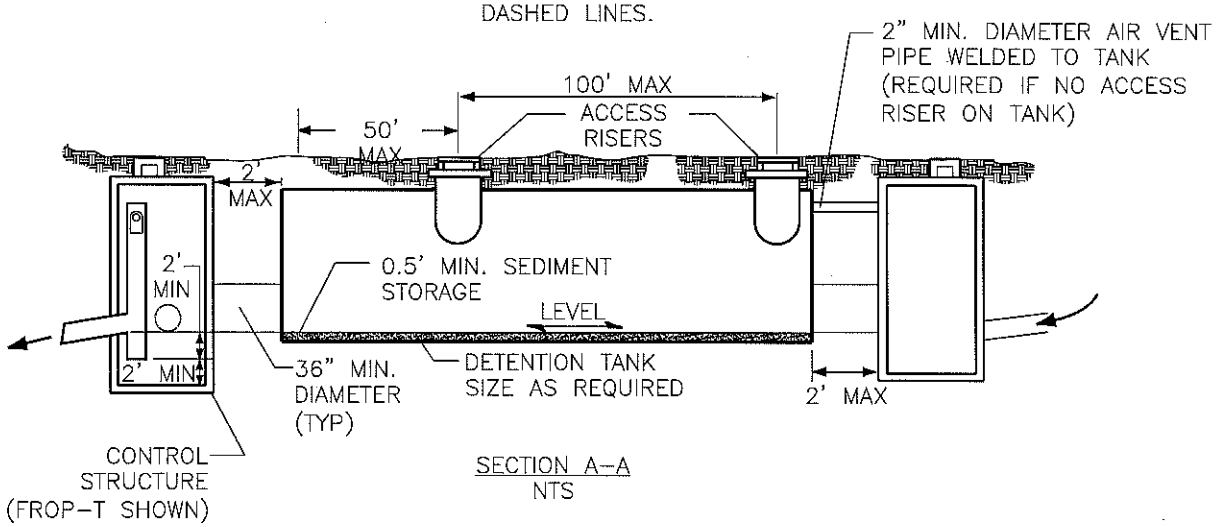
1. ALL METAL PARTS MUST BE CORROSION RESISTANT. STEEL PARTS MUST BE GALVANIZED AND ASPHALT COATED (TREATMENT 1 OR BETTER).
2. PROVIDE WATER STOP AT ALL CAST-IN-PLACE CONSTRUCTION JOINTS. PRECAST VAULTS SHALL HAVE APPROVED RUBBER GASKET SYSTEM.
3. VAULTS ≤10' WIDE MUST USE REMOVABLE LIDS.
4. PREFABRICATED VAULT SECTIONS MAY REQUIRE STRUCTURAL MODIFICATIONS TO SUPPORT 5' X 10' OPENING OVER MAIN VAULT. ALTERNATIVELY, ACCESS CAN BE PROVIDED VIA A SIDE VESTIBULE AS SHOWN.

SNOHOMISH COUNTY PUBLIC WORKS		APPROVED BY:
5-280	TYPICAL DETENTION VAULT	COUNTY ROAD ENGINEER — DATE 9/23/10



PLAN VIEW
NTS

"FLOW-THROUGH" SYSTEM SHOWN WITH SOLID LINES. DESIGN FOR "FLOW-BACKUP" SYSTEM AND PARALLEL TANKS SHOWN WITH DASHED LINES.

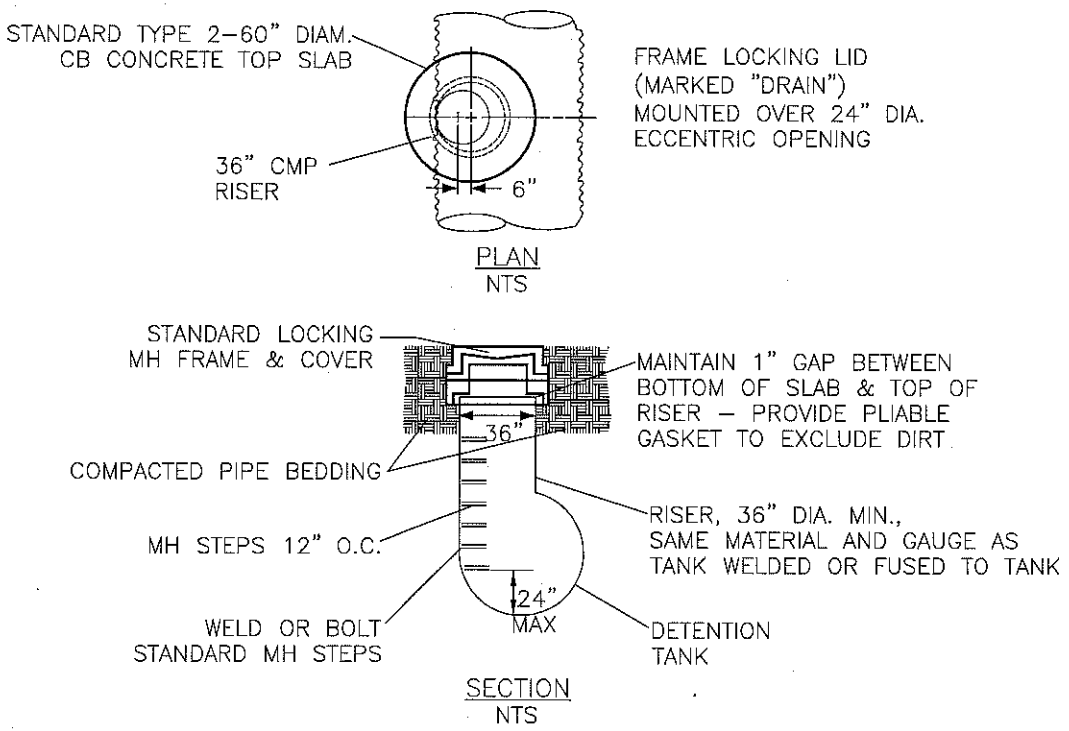


SECTION A-A
NTS

"FLOW-THROUGH" SYSTEM SHOWN WITH SOLID LINES.

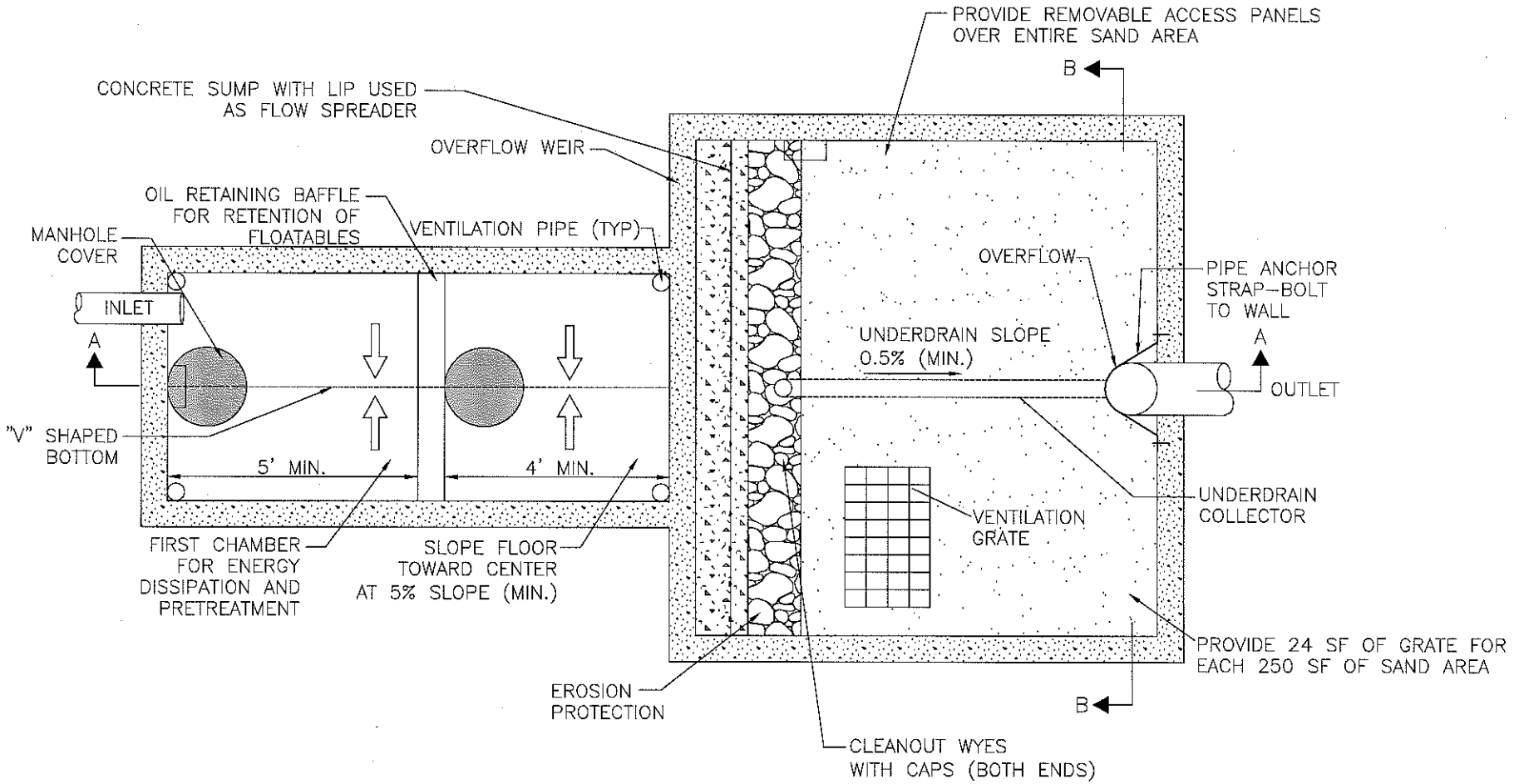
NOTE:
ALL METAL PARTS CORROSION RESISTANT. STEEL PARTS GALVANIZED AND ASPHALT COATED (TREATMENT 1 OR BETTER)

	SNOHOMISH COUNTY PUBLIC WORKS	APPROVED BY:
5-290	TYPICAL DETENTION TANK	COUNTY ROAD ENGINEER — DATE 9/23/10



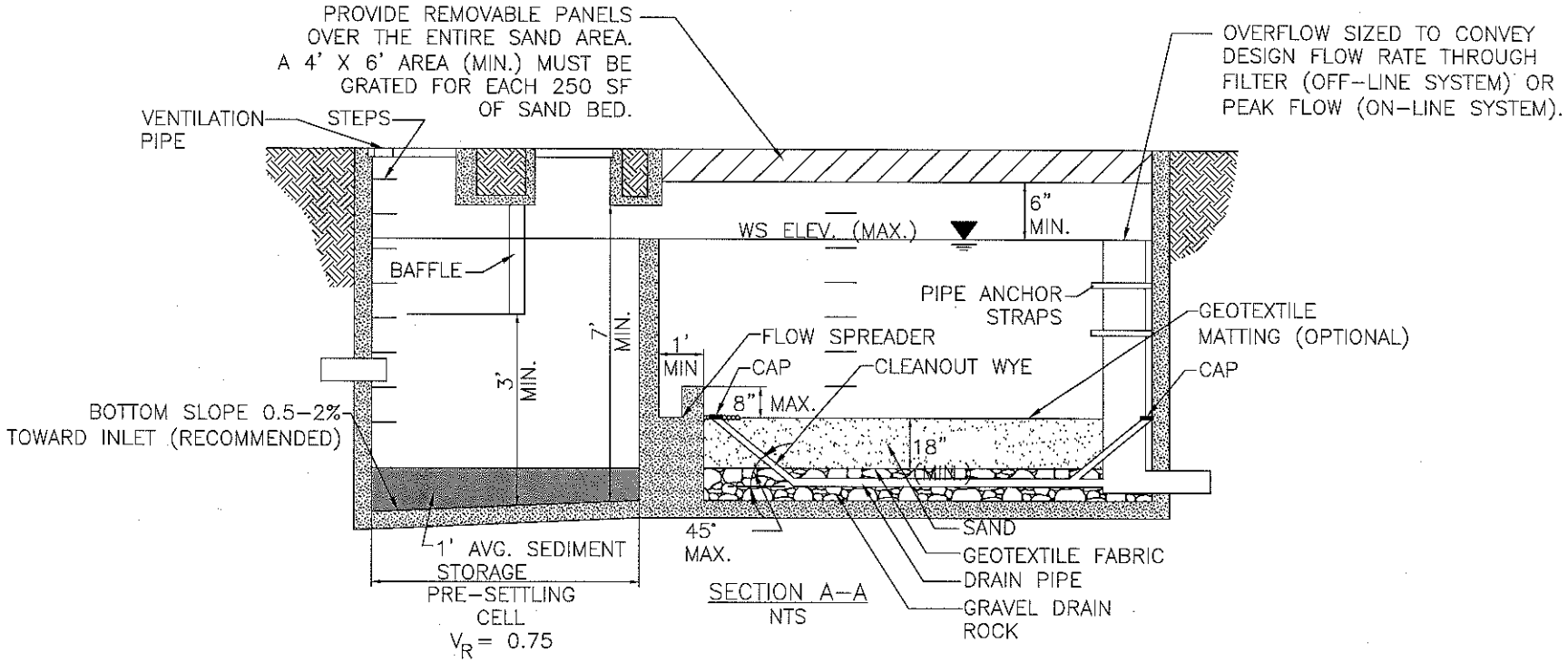
NOTES:
1. USE ADJUSTING BLOCKS AS REQUIRED TO BRING FRAME TO GRADE.
2. ALL MATERIALS TO BE ALUMINUM OR GALVANIZED AND ASPHALT–COATED (TREATMENT 1 OR BETTER).
3. MUST BE LOCATED FOR ACCESS BY MAINTENANCE VEHICLES.

	SNOHOMISH COUNTY PUBLIC WORKS	APPROVED BY:
5–295	DETENTION TANK ACCESS DETAIL	COUNTY ROAD ENGINEER — DATE 9/23/10

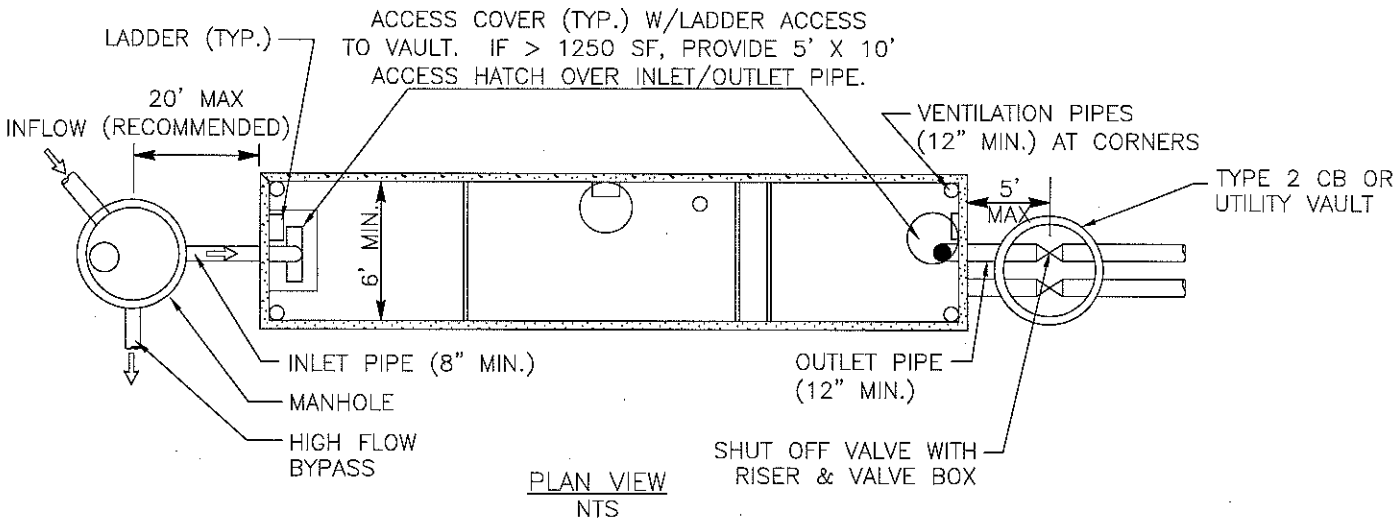


PLAN VIEW
NTS

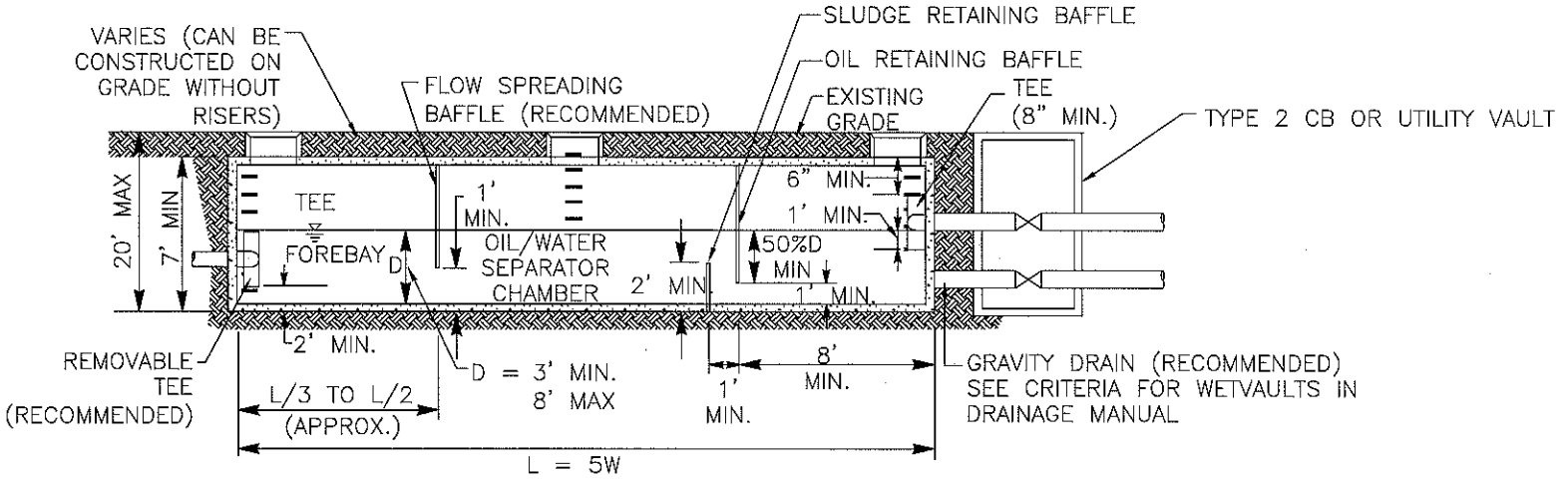
SNOHOMISH COUNTY PUBLIC WORKS		APPROVED BY: 9/23/10
5-300A	SAND FILTER VAULT	COUNTY ROAD ENGINEER — DATE



	SNOHOMISH COUNTY PUBLIC WORKS	APPROVED BY:
5-300B	SAND FILTER VAULT	COUNTY ROAD ENGINEER — DATE 9/23/10

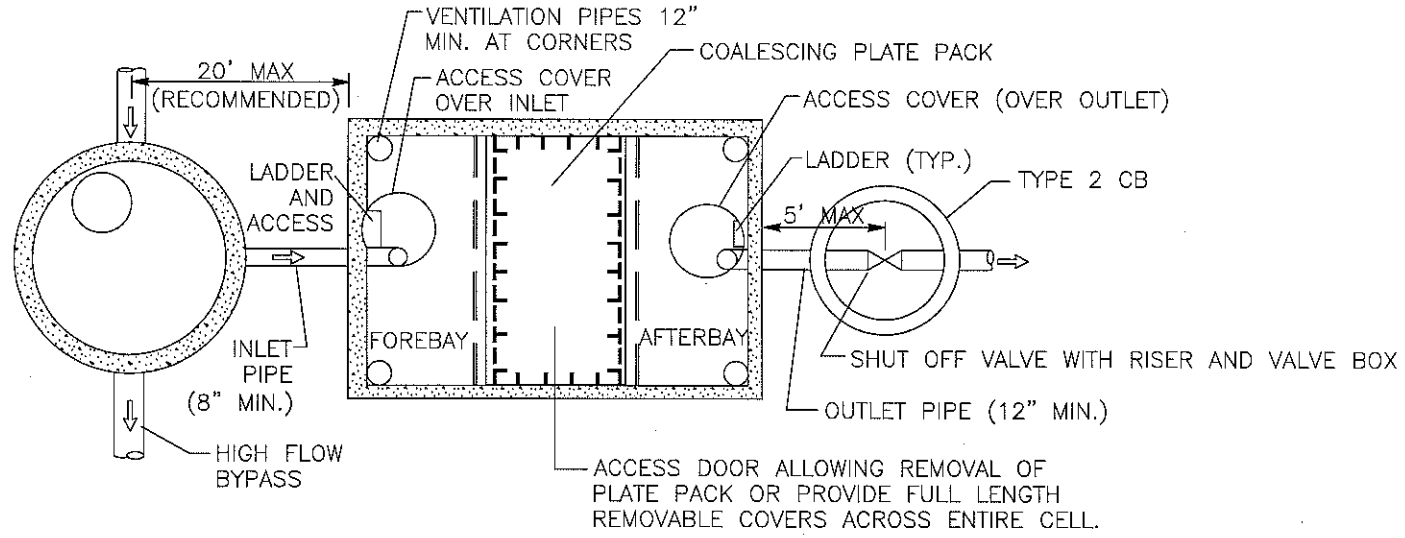


PLAN VIEW
NTS

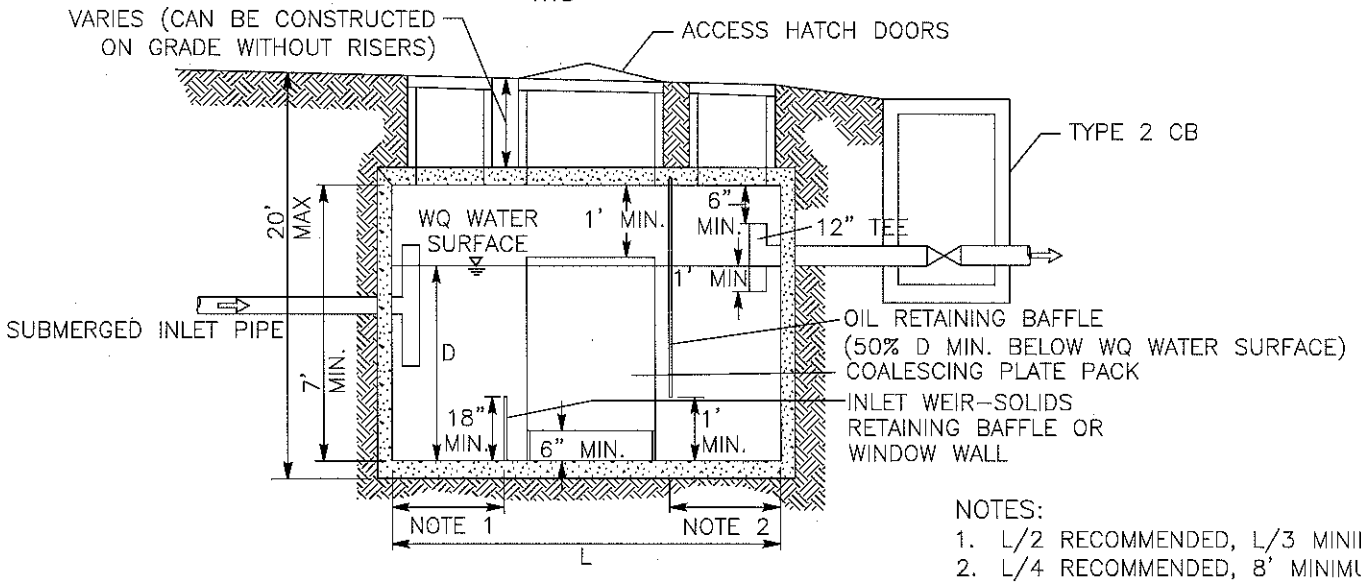


SECTION VIEW
NTS

SNOHOMISH COUNTY PUBLIC WORKS		APPROVED BY:
5-310	API (BAFFLE TYPE) SEPARATOR	COUNTY ROAD ENGINEER — DATE 9/23/10



PLAN VIEW
NTS



SECTION VIEW
NTS

NOTES:
1. L/2 RECOMMENDED, L/3 MINIMUM.
2. L/4 RECOMMENDED, 8' MINIMUM.

	SNOHOMISH COUNTY PUBLIC WORKS	APPROVED BY: 9/23/10
5–315	COALESCING PLATE SEPARATOR	COUNTY ROAD ENGINEER — DATE